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EDUCATION
AND SCIENTIFIC RESEARCH
IN SWEDEN

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FR. SANDBERG AND BÖRJE KNÖS

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HISTORICAL SURVEY.

In Sweden as in many other countries the school has developed from within the pale of the Church. The monks in the cloisters were the first to devote attention to the education of the people and schools sprang up at the cathedrals where priests and canons officiated as teachers. The monasteries, as well as the cathedral schools, considered it their foremost duty to train priests for the Church, but prospective servants of the State also received their education there.

Accordingly as the country developed materially, there arose the need of schools where the coming citizens of the towns and those engaged in industrial pursuits might acquire such knowledge as was useful to them in their various activities. Therefore, already in the Middle Ages, previously to 1500, "town schools" had arisen and these constituted a first attempt to provide civic education by means of public instruction.

Obviously, the teaching in these old-time schools was for the most part somewhat inferior. The art of printing was not yet invented and our present day school-books did not exist. The instruction was mostly oral. The teachers made a statement and the pupils repeated it and this went on until the lesson was learnt. When the pupils had reached riper years, the instruction partly took the form of lectures and the pupils were allowed to take notes. But most important of all was the constantly recurrent hearing of the lesson which the pupils had learnt by heart.

The subjects in the medieval schools were not many. Mainly, they were reading, writing and latin with religious instruction, of course, and song. In the higher classes a little logic was taught.

Popular education as understood nowadays, did not exist. The clergy taught the people the Lord's Prayer, the Apostolic Creed and the Ave Maria. Later came the Ten Commandments, but no instruction was given in reading and writing.

At the beginning of the 16th century the Reformation was ushered into Sweden. It carried with it changed conditions for the school, which to some extent became independent of the Church and passed under the jurisdiction

of the State. However, its main object was still to train the servants of the Church. The methods of instruction were primitive, as before, but printed school-books began to come to the pupils' aid. Time-tables especially took up latin and religious knowledge and, by degrees, certain general subjects, one by one, found a modest place.

A plan for a higher school instruction was devised by the great King Gustaf II Adolf, which, amongst other things, provided for the institution of Higher Secondary Schools. The first of its kind was established in 1623, at Västerås, and others followed, especially in the diocesan cities, where they took over the duties of the old cathedral schools.

About the same time the first schools for children were initiated and schools for the impartation of such knowledge as would meet the needs of the practical life came into force. On the whole, the 17th century, with the vigorous expansion experienced in many of the fields of its social life was a time of development even for the public educational system, although the perpetual wars and limited economy appeared to check its growth.

With the dawn of the 18th century came an end to Sweden's period of greatness. The decrease in outer power was met with an intense eagerness to develop and increase the country's inner strength by encouraging trade and industry. The need of schools for general civic education increased and during that century, signs of the diminution of the latin sway in the higher schools were manifest. There was also a fostering of the education of the people, though mainly on the initiative of private persons. The State had not yet intervened in these concerns.

The tendencies and aims which, during the 18th century, made themselves ever increasingly felt, more nearly culminated in the early half of the 19th century. The Upper Schools (gymnasiums) and the Lower Schools were conjoined in one scholastic institution with what is known as a classical "line" (latinlinje) and a non-classical "line" (reallinje), that is to say, the "line" with the dead languages and the "line" without. In 1842, the first Elementary School Statutes were promulgated by the Government, according to which there should be at least one school with teachers approved by the State, in every Parish. About the same time the first colleges were established for the training of Elementary School teachers.

During the century which has since elapsed, the system of instruction, the lower as well as the higher, has undergone enormous development and experienced great change. The study of classical languages at the Secondary Schools became restricted little by little and parallel with this the non-classical "line" was raised to an educational standard as high as that of the classical "line" while, simultaneously, the number of institutions for the

higher instruction considerably increased and public instruction as well as the education of Elementary School teachers vastly improved. The need of practical educational institutions for vocational training has ever more and more been met and finally, a comprehensive organization has been constructed for the work of the popular education. The Swedish system of education can undoubtedly be said to be of a very high standard and as evidence thereof, it may be mentioned, that to read and write is exceedingly prevalent here in Sweden. Analphabetic expression is of very rare occurrence.

THE CENTRAL EDUCATIONAL CONTROL.

The highest school authority in Sweden is the King in council, or the Government. The Ministry of Public Worship and Education exercises the highest control of the various kinds of higher and lower schools with the exception of a few special vocational institutions such as military and agricultural schools. The Universities and Institutions of Science and Art are also subject to this department. The various questions which concern the Swedish State Church are treated by the Ministry of Public Worship and Education.

The immediate control of the public education is in the hands of a Government authority, the Board of Education, which exercises direct supervision of the instruction and which proposes measures to the Government for the improvement and development of the educational system.

There are subject to the Board of Education, elementary schools, State, communal and private secondary schools and higher and lower technical schools as well as establishments for the training of Elementary School Teachers and Infant School Teachers. Only a number of institutions for vocational training come under other governmental departments.

The Board of Education comprises four departments, one for secondary schools, one for elementary schools, one for trade schools of various kinds and one statistical department.

INTRODUCTION.

Schools which do not reach the same stage of attainment as do the Universities and Colleges are, as a rule, divided into two main groups, the elementary schools and the secondary schools, approximately corresponding to what in Sweden are schools for children and schools for young people. To the former category belong Elementary and Continuation Schools,

to the latter, State Secondary Schools especially, and those Communal and Private Schools which aim at the same standard of instruction as the State Schools. These institutions grouped under one common name, might be called the Higher Educational Establishments. But there is still another large category of educational institutions of which some belong to the grade of the Elementary Schools, others to that of the Secondary, and they include the practical schools for young people. in their most comprehensive sense.

The following survey includes these three groups of scholastic establishments and those institutions are mentioned at which teachers are trained for the various kinds of schools.

The foundation of the entire school system which comprises the Swedish public instruction is the Elementary or primary School. Upon this school are built not only the Higher Secondary theoretical schools among which the State Secondary Schools occupy the central position, but also the practical schools on the secondary stage. From these two main groups of schools the way leads to the University and to institutions which afford higher vocational training of various kinds.

ELEMENTARY EDUCATIONAL INSTITUTIONS.

ELEMENTARY SCHOOLS AND CONTINUATION SCHOOLS.

School districts. Since olden times Sweden has been divided into Parishes. Each Parish constitutes a school district inasmuch as it is not specially ordained that the Parish be divided into several school districts or that several Parishes be combined in one school district. In each such district at least one Elementary School shall be found.

School Control. The control of the schools in the various school districts was exercised earlier by a board called the School Council (skolråd). As a matter of course the president of the Council was the incumbent of the Parish or the one deputed to fill his place. In connection with a modification of the communal administration in 1930, the clergyman of the Parish was no longer obliged by virtue of his office to act as chairman, although he might be elected and, as a matter of fact, this still occurs to a wide extent. However, already earlier, school boards of another kind were introduced. In such school districts as are coincident with civic communes, there shall be a so-called Elementary School Board while the School Council

shall continue to exist in the other school districts. The president of the Board has been elected from the very beginning from among the members of the Board.

The foundational resolutions and especially those of economical content are laid down by a special local organ. Where school districts coincide with the Parish commune the Parish Assembly (kyrkostämman) has the right to promulgate resolutions. Should, on the contrary, the coincidence be with the civic commune, then the Town Councils in towns and Communal Councils in country communes exercise this right. The Parish Assembly elects the members of the School Council, the Town or Communal Council elects the members of the Elementary School Board.

On the whole, the School Council and the Elementary School Board have the same functions. There is, however, one important difference. The School Board has the right to appoint ordinary teachers while the School Council may only propose teachers who, afterwards, are elected by the Parish Assembly or by the Church Trustees (kyrkofullmäktige), which corporation is chosen to act in its stead.

Some school districts appoint municipal Elementary School Inspectors or superintendents to assist in the local control of the school administration. In certain towns there are both inspector and superintendent, for instance, Stockholm has two inspectors (besides an inspector for the Continuation Schools) and a number of superintendents who exercise immediate supervision and control, each within his own district.

The old connections which existed before-time in Sweden between Church and school, rendered the Chapter an intermediary authority in certain matters dealing with the Elementary Schools. Although the influence of the Church on the affairs of the school has considerably diminished, the Chapter still retains the right of decision in many school questions of an important nature.

The Chapter sanctions the regulations for the various school districts and appeals in organizatory questions about the appointment of teachers rest primarily in their hands. In financial matters, authority, as a rule, is vested in the local provincial government. Requests for State subvention are made to the same authority which decides as to the disbursement of such grants. These grants are considerable. More than half of the yearly expenses for the schools are paid by the State, which also gives large contributions for other elementary educational purposes.

Supervision. The immediate supervision of the Elementary Schools is exercised by Elementary School inspectors who are appointed by the

Government. The country, at the present time, is divided into 52 districts each having its own inspector. Earlier, inspectors were elected from among the priests and teachers of the higher educational institutions, but of later years these inspectors have almost exclusively been teachers of Elementary Schools. The inspector's work is as important as comprehensive. Not only shall he visit the different schools within his area of inspection and there control the instruction and ascertain that the rules and regulations are being observed but, a matter of considerable urgency for him is, that he shall advise, direct and inform the local school authorities and teachers in every pertinent respect. In addition, comprehensive work of an administrative nature falls to the lot of the inspector. He shall look into the requisitions for subvention, express opinion on a number of questions, and give information to the various authorities on matters relevant to the school. On the whole, the previously mentioned Communal Elementary School inspectors have the same duties to perform as State inspectors.

Elementary School organization. The Elementary School course has two divisions, a lower and a higher. The former is the Infant School which comprises the two lower classes and is of two years' duration. The latter is the Elementary School proper. The entire school course usually extends over six years, but there are instances of seven and eight. In this case the two highest classes are generally called the Elementary School's higher division and is, of course, voluntary.

An important step towards the improvement of the people's education was taken in 1936 when the Parliament, on the proposition of the Government, ordained an obligatory school period of seven years for Elementary Schools. The transition to this new arrangement shall take place during 12 years. Among school authorities a seven years' course had long been desirable. A further year was considered necessary in order that pupils might more thoroughly benefit from the prescribed course, and recent years have given rise to yet another reason. Owing to the financial depression there has been considerable unemployment amongst the youth and, obviously, an extension of the school course must contribute, in its way, to a lessening of the number of young people out of work.

The annual period of instruction must comprise eight months or 34 ½ weeks if State subvention is to be obtained. In many places the school district has extended the period to 39 weeks at its own expense and more than once a proposal has been made to lengthen the time. This question has become especially actual in connection with the regulation of the Elementary School teachers' salary, made by the Parliament in 1937. The number of

instruction hours in the week may not exceed 36. The minimum number of hours varies somewhat in the different classes. As a rule, instruction is carried on during the six days of the week, but there are cases when Saturday is free.

In comparison with its size Sweden has a small population which, in addition, is very unevenly distributed over the country. In the southern parts, the percentage is rather high. There are as many as 110 inhabitants to the square kilometre in some places, but the Northern provinces are scantily peopled, there being in the most northerly district only two persons per square kilometre. These conditions have, of course, a great influence on the Elementary School's organization. It is not possible to carry on and maintain schools in districts where villages and homesteads lie so far apart, at the same standard, as in those parts of the country containing numerous towns and thickly built communities, and where the population, even for the country-side, is comparatively great. Owing to this, it has been necessary to provide various forms of schools to meet the individual needs of the district.

According to the regulations in the Elementary School Statutes one school shall be permanently located at one and the same place. The statutes concede, however, that the school may be ambulatory, which implies that it is the teacher who moves from the one place to the other. Obviously this means that the children can only receive instruction during a part of the school year. Such a form of schooling can only give defective results and is, of course, only an emergency measure occasioned by the great distances and sparse population. Nowadays, such schools exist only in the most northern parts of the country in Norrland, in which the children number about 5,000.

Most of these children belong to what is known as a minor Elementary School. Such schools may only be established where the school district lies isolated and remote and the number of children so small as to render it impossible to set up an ordinary Elementary School. The schools may be permanent or ambulatory. Teachers at these minor Elementary Schools possess the qualifications required of the Infant School teacher. Being considerably inferior to the ordinary Elementary School, endeavour has been made to diminish their number as much as possible. The majority are in Norrland.

Should a school move between two places, the pupils at each place are afforded instruction during only half of the school year. However, such a shortening of the time occurs not only in connection with the ambulatory schools but permanent schools may be subject to the same rule. These are

usually called half-time schools in distinction to the full-time, which indicates that the pupils attend school every day during the school year. For many years half-time has been the rule in many Elementary Schools. Undoubtedly this is due to the long distances which children more often than not have to go. A distance of 5 kilometres and more was and is nothing unusual in the Swedish country-sides and the daily walk to and from school might easily tend to fatigue. Other reasons may also be attributed to the half-time school. Parents, not the least in the agricultural districts, have wished to keep their children at home as much as possible in order to have their help. An additional reason was, that a great number of children must, in many places, receive instruction from one single teacher. To lessen these difficulties the pupils were divided into various groups which received instruction separately. In certain parts of the country half-time schools were, earlier, the common form of instruction, while, in others, there were full-time schools from the very start.

It is easy to understand that a teacher cannot have the same results in a half-time, as in a full-time school and, therefore, for many years there has been a desire to reduce the former as much as possible. And to a great extent this has been accomplished. In some provinces there are none to speak of, in others the number, during recent years, has considerably diminished. In 1935 the pupils in half-time schools were only 6.6 % of the whole number of pupils in Elementary Schools.

Owing to the varying conditions of the different parts of the country instruction is given in schools having very dissimilar organization. Various types of schools are thus spoken of. There are the so-called "normal" schools and the "exceptional" schools which may only be established when obliged by local conditions. The best organized schools have a teacher for every class or teacher's division. In others, classes are put together, two and two, to form a division whilst, in some schools, the Infant classes constitute one division and the Elementary School stage another. Schools belonging to the "exceptional" class are either half-time or minor schools. The various schools are generally indicated with letters or letters and figures (A, B₁, B₂, etc.).

Schools for abnormal children. Abnormal children do not receive instruction together with normal children, as a rule. The blind, deaf, and dumb and the mentally defective thus receive instruction at special institutions. For many years the education of blind children has been compulsory in Sweden, and this obligatory attendance commences at the same age as with children of the Elementary Schools. At Tomtebodå, in the neighbourhood

of Stockholm there is Sweden's only Institute for the Blind, where blind children receive care and both theoretical and practical instruction, and where teachers for blind schools are trained. Persons who have become blind at an age exceeding 14 years are received into handicraft schools for the blind, where instruction is given of a practical kind. Blind Schools are almost exclusively supported by the State. The education of the deaf and dumb is also obligatory. Not until 1937 was the maintenance of deaf and dumb schools undertaken by the State. There is an institution for the deaf and dumb at Manilla, near Stockholm, and teachers are also trained there.

Depraved children and those receiving little or no education in their homes may be sent to special correctional and educational institutions which are established and supported by the communal representative of the province, known as the Provincial Assembly.

As the Elementary School is a compulsory school it is obliged to receive all the children who belong to its administrative area, with the exception, of course, of the abnormal. Obviously, the pupils are more or less talented and some there are with very slender endowments. These latter are great obstacles in the path of the school's progress. Therefore, in many places, and chiefly in the greater communities, children with inferior ability are grouped into separate divisions known as auxiliary classes, where the courses are less comprehensive and the number of pupils limited.

Special arrangements have been made here and there for children suffering from considerable disability, for instance, defective speech or tuberculosis, and care has been taken of psychopathical children during the last few years.

Certain Institutional Assistance. In the greater part of northern Sweden, as before mentioned, the country is scantily peopled and villages and homesteads are far apart. Often also in these districts the financial resources are small, as the climate is severe, the soil less fertile, and opportunities of making money, few. Under such circumstances parents may not only have great difficulty in sending their children to school—especially during the cold winter of the year—but also in equipping them with food and the necessary clothing. The State, and private persons have taken measures of various kinds to assist the parents in this need. Many years ago, on private initiative, in the most northerly part of Norrland a kind of home was instituted (*arbetsstugor*) where children from necessitous homes are received, fed, clothed and cared for. Additionally, they obtain the ordinary instruction at the neighbouring schools. These Homes have been, and are, a great blessing to these remote districts and new ones are continually being

established. Nowadays they are supported by considerable subventions from the State.

With similar aims, communes and private persons have arranged for the lodgement of children in suitable homes situated in the neighbourhood of schools. This enterprise also receives grants from the State. Of recent years the State has ordered the institution of "School-Homes", where children may live, instead of being boarded in private homes.

In certain districts arrangements have been made to convey the children to and from school. Various kinds of vehicles are used for the purpose, if the numbers be great then, often, omnibuses, otherwise motorcars, horses and carts and boats. This conveyance, and the housing of children in school-homes is of significance, however, in another respect. Thanks to these arrangements it is possible, in certain districts, to render the educational system more rational and less expensive than could otherwise be the case as, thereby, schools with few pupils can be drawn in, and one is relieved of the necessity of establishing schools in remote places. The conveyance system has come more and more into use, and the tremendous development of the means of transit in Sweden, of recent years, has contributed towards the same. Subsidies are granted by the State for "school conveyance".

Furthest up in Norrland there is a population of quite another race, known as Lapps. Many of these are nomads and thus have no settled dwelling place. For the children of these nomads there are special schools. These schools and their teachers accompany the Lapps on their migrations and the instruction is often given in quarters of the same simple kind as the Lapps' own dwellings.

School-buildings. The school districts are obliged to build and maintain the school premises and provide a sufficiency of ground. Nowadays the State gives the school districts considerable subvention for this purpose. Formerly, it was the custom to arrange the teachers' dwelling within the school-house, and many such school-houses are still to be found. Nowadays, teachers' quarters, with the exception of certain cases, shall occupy a separate building near the school. In the early days of the Elementary School, the school-buildings were exceedingly unpretentious and often very poor. Pretensions as to the fittings and school-material were also at that time extremely small. Accordingly as the educational system has developed and the demand for instruction become greater and of a higher standard, the desire for school-buildings of another class obviously increased. To-day, schools are always well built and in a manner adapted to their purpose. In many instances it can be said that they have fulfilled the highest demands.

As regards interior fittings and material, there is also considerable improvement. Many schools have, besides class-rooms, rooms for sloyd, for instruction in domestic economy, and for gymnastic etc.

Physical culture. The Swedish Elementary School not only aims at giving its pupils instruction in certain subjects but, to the extent circumstances permit, it undertakes the physical care of the school children. Gymnastics are exercised in connection with games and sport. For the care of the teeth have clinics been established at certain places and, latterly, even ambulatory such. Also, energetic propaganda is going on in the country for school baths, in connection with public baths. There are many places where schools are provided with baths and showers and even plunge baths. Meals are provided for the children in larger towns and communities, free of charge for necessitous pupils, and at a small rate for those better situated. During the summer vacation which, in Sweden, owing to climatic conditions is comparatively long, necessitous children in many places are enabled to spend some time at "school vacation colonies". These so-called colonies are arranged at suitable places, generally on coastal regions but sometimes up in the mountains and they are maintained by contributions and communal grants.

Teachers' training. In the Swedish Elementary Schools there are both men and women teachers. These receive their training at Training Colleges for Elementary School Teachers and Training Colleges for Infant School Teachers. At the former, teachers are trained for the Elementary School proper, and at the latter, for Infant Schools and minor Elementary Schools. The course of these colleges covers four years and the students obtain both theoretical and practical instruction, the latter, at a practice school attached to the college. Quite recently a new college organization has been decided upon, according to which there shall be ten Training Colleges for Elementary Schools. Some are intended for men, others for women teachers, while certain of the establishments receive both. At five of the Colleges there is a special two-year course for those who have taken the general matriculation examination (studentexamen) which is held at the Higher State Schools and which entitles the student to enter the University. The Training Colleges for Infant Teachers number seven and receive only women pupils. Two of these, situated in the most northerly part of Sweden have a three-year course. The course at the others lasts two years. To the minor School Training Colleges, schools are also attached where the students may obtain practice in teaching.

THE HIGHER PUBLIC EDUCATION.

STATE SECONDARY SCHOOLS.

Types of Secondary Schools and organization. The secondary schools of Sweden are of three kinds: (1) Higher Secondary Schools comprising a non-classical Lower School (realskola) and a classical and non-classical Upper School (latin and real gymnasium), (2) non-classical Lower Schools (realskola), and (3) Lyceums. Independent Lower Schools correspond to the lower stage of the Higher Secondary Schools. The Lyceum is a new type of school which came into force through the Parliament resolutions of 1927. It may be independent or conjoint with Higher State Secondary Schools.

The organization of the Secondary Schools varies considerably nowadays. It coincides with the development of the school policy in Sweden during the last decades. For many years, and especially on the part of the champions of the Elementary Schools, the aim has been to have an organization according to which the Elementary Schools would serve as foundational or primary schools, to the Higher Schools. This implies that the lowest class of the Higher School would immediately follow the standard of the highest class of the Elementary School, thus forming a system of unification in which the various stages would be in direct conjunction with each other and, which, without interruption, would lead from the first infant instruction to the last course at the Higher Secondary School. After several years of investigation and deliberation, the organization of the Secondary Schools was regulated by the Riksdag of 1927. The enactment may be said to be a combination of the old organization coupled together with the newer aims.

The Lower School now comprises five one-year classes commencing at the standard of the fourth class in one of the best types of elementary schools or four classes, beginning at the standard of the sixth or hitherto highest class.

In like manner the Upper School is organized. It is comprised either of four one-year classes (ringar) and begins at the standard of the highest class but one of the Lower School, or it includes three classes beginning with the standard of the highest class of the Lower School.

The Independent Lower Schools comprise, in certain cases, only a four-year "line", in others, both a five- and a four-year. There are also a few such schools with a five-year "line" only.

The Lower School which forms part of Higher Secondary Schools has a similar organization. The majority of these have both a four- and five-year Lower School, while some have a four-year and others a five-year. Also the Upper School, of the Higher Secondary Schools, has both four-year and three-year classes usually. The instruction proceeds along two "lines", the classical and the non-classical (latin and real gymnasium). The Humanistic subjects dominate in the Latin, and Mathematics and Natural Science in the Modern.

Mixed Schools. The Swedish educational institutions were originally intended for male pupils exclusively. Not before the present century has any modification occurred. The first step towards the establishing of mixed institutions in the State Secondary Schools was taken in 1904 when a few mixed Lower Schools came into force. However, mixed schools were not then quite new in Sweden. Elementary Schools were from the beginning meant for both boys and girls as were also the People's High Schools for young people, and at certain private Higher Schools mixed classes—especially as a pedagogic experiment—had been in force for two or three decades. But for the Secondary School it was a complete revolution in this respect when, in 1927, the Riksdag enacted that the majority of the Higher Secondary Schools and Independent Lower Schools should be turned into institutions for both boys and girls. In the largest towns there are boys' schools still and during recent years schools for girls have also been established.

That mixed schools prevail so extensively within the domain of Sweden's Higher Educational system is obviously and primarily due to financial reasons. The higher education of girls was entirely entrusted to private schools earlier, and when it was resolved that the State should, to some extent, provide for the education of girls also, it was found that the expense would be too great if special institutions were erected for them. Many were the misgivings expressed at so great an increase of mixed instruction for children of this age, but when previous experience was considered satisfactory on the whole, the step was taken. In reference to the results, it should not be omitted to state that no inconvenience worthy of mention has hitherto taken place.

The Lyceum. This type of institution, as already mentioned, is very young. It was introduced as a result of the enactment of the Riksdag of 1927, and affords the instruction of both the Lower and the Upper School. It comprises six one-year classes (kretsar) and is based upon the sixth

class of the Elementary School. According to the regulations, the Lyceum is divided into the classical Lyceum, and the non-classical Lyceum, and the non-classical Language Lyceum. The last mentioned is a new feature in the State educational system and the Lyceum itself, which is a new type of school, has hitherto only been established in a few places. There is no independent Lyceum and up to the present only one classical and one non-classical "line" has been realized.

Tests for admission. The student who desires to enter a State school is obliged to pass an examination for admission. Considerable difference is made in this respect between those who have gone through the Elementary School and those who have obtained their preparatory instruction in some other way. The former are merely examined in two subjects, Swedish and Arithmetic, while the obligatory subjects for the latter category are Religious Knowledge, Swedish, Arithmetic, Geography, History, and Natural Science. Students seeking entrance to a class higher than the first must go through a test in the course previously taken.

Fees. The Swedish Secondary Schools were originally entirely free. In the 19th century a very low fee began to be charged to defray the costs, primarily, of heating and light, and of school material and books. The fees were considerably reduced for pupils of limited means. Some thirty years ago fees to the State were introduced and these are still payable. The total sum varies according to the different establishments and mainly depends on the variable needs for the supply of heating and light. Generally the sum should amount to about 50—60 kronor each term, or 100—120 Kronor each school year. Only a certain number of the pupils pay full fees. A reduction of fees is extensively granted and in many cases pupils are entirely exempted. In comparison with many foreign countries the fees of the Swedish State Schools may be said to be low.

Subjects. The subjects taught in the Swedish Secondary Schools are similar to those of the Higher Schools of other countries. But Sweden, like other small countries is obliged to give instruction in English, French and German in every secondary school. Obviously this burdens the curriculum considerably and occasions no little crowding of the time-table which in the Lower Schools is already making itself felt. The time-tables of these Schools include Religious Knowledge, Swedish, German, English, French, History with Social Science, Geography, Mathematics, Biology with Hygiene, Physics, and Chemistry. All these subjects are compulsory, with the excep-

tion of French which is obligatory for those wishing to continue their studies in the Upper School. Certain subjects only are taught in the higher classes of the Lower School. Instruction in English and Physics is given in the three highest classes, French and Chemistry in the two highest.

The subjects contained in the time-table of the Upper School are the same as those of the Lower School with the addition of Latin, Greek and Philosophy. Latin is taught from the lowest "circle" (ring) of the Upper School while Greek and Philosophy are embraced only in the two highest "circles" (ringar).

However, pupils at the Upper School are not obliged to take all these subjects. Latin and Greek are restricted to the classical "line" of course, but all the other subjects occur on the time-tables of both the classical and non-classical "lines". The numerous subjects included in the syllabus of the Upper School have long since caused apprehension and a desire to reduce the number has arisen, to allow of a deepening into the study of those which remain, and to give the pupils the possibility of specializing their studies to some extent while still at school, and to do independent work. Such an organization came into force of later years, however, in accordance with the statutes of the Riksdag of 1927. As far as concerns the two highest classes of the Upper School, it is as follows: the subjects are divided into two groups, of which, the one comprises the compulsory subjects for all the pupils, and the other embraces a number of subjects which are voluntary, and from among which some may be chosen by the pupils. The obligatory subjects are Religious Knowledge, Swedish and History, with the addition of Latin and French in the classical Upper School, and English and Mathematics in the non-classical Upper School. Each pupil is moreover obliged to choose a group of three (exceptionally, two) subjects during his two last years at school. The subjects are grouped within combinations of subjects thus leaving the choice of the pupil not entirely free.

By the side of the ordinary school instruction independent work must be done by each pupil in the two highest classes in the Upper School. This is intended to awaken and further his ability to handle a subject without assistance, with a view to developing his independence, initiative, and sense of responsibility.

The classical languages which, for a long time, held a dominant place in the Swedish Secondary Schools, have occupied a rather weakened position during the last decades. Being convinced of the enormous importance of these languages in the higher standard of culture, the Government instituted special classical "lines" a couple of years ago. These, which are yet very

few in number, are of six years' duration. They include Latin throughout the entire school course and Greek during the last four years.

In addition to the theoretical subjects, place is given in the syllabus to practical subjects as well. These are penmanship, drawing, music, gymnastics with games and sport, sloyd for boys and girls, and domestic economy for girls. Sloyd for boys is at present voluntary and instruction in domestic economy is given only in certain cases. These two practical subjects should be compulsory by degrees. Gymnastics in Swedish Schools dates from olden times. In this domain Sweden occupies a place in the foreground as the native country of Per Henrik Ling's gymnastic system which has been of pioneer importance for physical culture in the greater part of the civilized world. Of recent years sport has gained in position by the side of gymnastics in the Swedish educational establishments. Various kinds of the same are exercised in every school and a certain number of days during the school year are entirely devoted to open-air life, more frequently than not, in the form of some kind of sport or other. As a matter of course pupils engage in sport apart from the everyday school life and their interest in the same is exceedingly great. An ever growing care is devoted to the various practical subjects included in the Secondary Schools.

The Practical "Lines". The above mentioned subjects of instruction, viewed apart from the practical which have a special object, are seen to be exclusively theoretical, just as they are in the Secondary Schools. Simultaneously as insight has more and more been gained into the value of practical subjects educationally, the influx of children to the theoretical schools has been viewed with concern, in Sweden, as in other countries, and many ideas have been forthcoming for restricting and diminishing this inflow. As a suitable measure, it was proposed to organize an educational "line" on the Lower School stage with a wide range for practical subjects which might carry the pupils to a finish as comparable and excellent as that obtainable at the ordinary Lower School. Experiments have not been restricted to the State Secondary Schools, but the system has also been adopted at the Communal Intermediate Schools which are parallel with the Lower School, and at Higher Elementary Schools of which more will be said in the following. The organization of the practical lines of instruction differs somewhat according to the type of School. At the State Secondary Lower Schools and at the Communal Intermediate Schools they comprise the two highest classes. All the pupils partake in the instruction of the preceding classes. In the two highest classes they are divided severally into the theoretical and practical "lines". The syllabus embraces practical subjects

varying according to the main trend of the "line". At the Higher Elementary Schools, the division begins already at the very lowest class and proceeds right through the school, that is to say, three or (usually) four classes. These schools are known as Practical Intermediate Schools. The "lines" of instruction and the schools which have hitherto been established afford instruction of a technical and commercial character and, exclusively for girls, domestic work of the various kinds. The classified "lines" and the Practical Intermediate Schools terminate with an examination called the "praktisk realexamen" (an examination in modern practical subjects). As already mentioned, the experiments with the practical "lines" and schools have been in progress only a short time, but the hitherto excellent results of this type of school should tend to bring about a widely-spread expansion.

Examinations. The courses at the Lower and Upper stadium of the Secondary Schools finish with examinations. At the Lower School the "realexamen" takes place annually and is partly written and partly oral. The papers for the written examination are set by the Board of Education. They are the same for all the Secondary Schools in the country and include Swedish, German, English and Mathematics.

The finishing examination of the Upper School is the general matriculation examination (studentexamen) and is arranged approximately on the same lines as the "realexamen". The matriculation examination comprises writing in at least three subjects, in the classical Upper School, Swedish, Latin, and French, in the non-classical Upper School, Swedish, Mathematics, and English, but pupils are allowed to take part in other written tests. Pupils who have passed the written examination proceed to take the oral which, latter, is under the supervision of a number of "censors" appointed by the Government, chiefly from among the professors at the universities. The "censors" pass or fail the pupil and this even usually occurs should the pupil fail to satisfy the requirements for a pass in one or more subjects. Those who pass the matriculation examination are privileged to wear a white cap which serves as the common examination badge.

Students who have passed the Matriculation examination are entitled to enter the University, and to obtain admission at the various kinds of higher vocational institutions. Criticism has lately been directed towards the system of the matriculation examination and it is asserted that the examination is overestimated by the public, which exaggeration should tend to attract the youth towards the theoretical course.

The Teaching Staff. At the State Secondary Schools there are teachers of various grades: lectors, adjuncts, women teachers and teachers for practical classes. There are also non-regular teachers, if needed. Lectors are appointed only at the Higher Secondary Schools while adjuncts and teachers of practical classes are employed at every school. Women teachers up to a certain number shall be found at all schools at which girls are received. The qualifications differ according to the category of teacher. A lector must have passed the special graduate examination for secondary teachers (filosofisk ämbetsexamen) and the examination for the degree, Licentiate of Philosophy (filosofie licentiatexamen) and have publicly defended a thesis which he himself has written and published for the degree of Doctor of Philosophy. An adjunct must have passed the "filosofisk ämbetsexamen" which carries with it the title "filosofie magister" (M. A.). Teachers of Religious Knowledge have in most cases passed a theological examination and, in addition, studied one or two profane subjects. It is obligatory for the coming teacher to have passed through a one-year's training course for teachers which is called the probation year and which can be taken at Secondary Schools in Stockholm, Gothenburg, Uppsala and Lund and at training colleges in Stockholm and Gothenburg. On application to the Board of Education the candidate for teachership is granted admission at one of these establishments where he exercises his probation year in the subjects he wishes. The course usually comprises two terms during which the candidate hears the pupils' lessons, gives instruction of short duration, and goes through tests in the various stages of school instruction. Simultaneously he attends pedagogical lectures, partakes in discussions and gains experience in whatever way presents itself. For women teachers there are two different kinds of training. Some pass the same examination as adjuncts and serve the probation year. Others acquire the necessary qualifications at a Higher Training College for women, in Stockholm, at which institute women may also be trained for teachership in Girls' schools.

Obviously, teachers of practical subjects are obliged to receive vocational training at special institutions. Drawing teachers partake in a course of several years duration at the Technical School in Stockholm. Gymnastic teachers receive their training at the Central Gymnastic Institute in Stockholm and Music teachers theirs at the Conservatory of Music at the Academy of Music in Stockholm. The organization of the training of teachers for State Secondary Schools has been severely criticised in various places, and a special committee is now working out propositions for a new scheme of instruction.

The Headmaster of every State Secondary School is called the Rector. He is appointed by the Government after election by the Board of Education for a certain number of years, usually six. By the side of his instructional duties, which are less comprehensive than those of the teacher, the Rector has many tasks to perform. Not the least of these is to attend to the business of the school in its various departments. The Rector and teachers form the collegium which handles many questions concerning the school's inner life.

Formerly State Secondary School teachers were exclusively men; in rare cases there would be a woman teacher, in some practical subject. The first women teachers made their appearance at these institutions in connection with a number of mixed schools established in accordance with the Riksdag of 1904. Coincident with these schools a number of appointments for women were ordained. Through a change of law which came into force in 1925, women obtained the same rights of teachership at the State Secondary Schools as men, and subsequently the number of the former speedily increased. At the present day 30 per cent of the total number of teachers are women.

Lectors and adjuncts are elected by the Board of Education upon which they receive their nomination from the Government. Other ordinary as well as non-regular teachers are appointed by the Board of Education.

THE STATE HIGHER TRAINING COLLEGE FOR WOMEN TEACHERS.

As mentioned previously the higher education for girls has long been left to the care of private schools. The State Secondary Schools were only open to boys. However, in 1864 the State instituted a school for girls called the State Normal School for Girls, as a practice school for the then newly established State Higher Training College for Women Teachers, in Stockholm. The Normal School has had an important mission. It has served as a model for private girls' schools which, until recent years, have provided the higher instruction for girls. The School today comprises six or seven classes and begins at the standard of the fourth and sometimes the sixth class of the Elementary School. In certain respects its organization is similar to that of the Higher State Secondary Schools but, its aims, especially as regards certain subjects, are considerably below the standard of the Secondary School. Unlike the State Secondary School, the Normal School holds no examinations. At the termination of

the course the pupil receives a leaving certificate which implies certain qualifications, especially of service for entry into the various vocational institutions.

The State Higher Training College for Women Teachers comprises three obligatory one-year departments and a voluntary one which, latter, is exceedingly employed. The first department affords an all-round general instruction after which studies are specialized in the higher departments. For admission, a leaving certificate from the Normal School for Girls, or from a girls' school of similar organization is necessary. These certificates are merely ostensible, as the requirements for entry are in reality considerably higher on account of the competition. In addition to the Normal School two other practice schools are attached to the Training College. One is a four-year Lower School, the only State Lower School for girls in the country, the other is a girls' Elementary school of the most excellent type. Conjoint with the Training College is also an establishment for training women teachers in domestic economy. The College trains women teachers for the State Secondary Schools, for communal and private girl's schools and for private homes. The College organization has been long under discussion and is at present being deliberated in connection with the Secondary School teachers' training problem.

COMMUNAL SCHOOLS.

Communal Intermediate Schools. The development which took place in Sweden during the latter half of the 19th and the 20th centuries, in the communicational, industrial and commercial areas was instrumental in the rise of larger and smaller communes of town-like character. By degrees, a need was felt for schools which imparted a higher instruction than that of the Elementary School. In several places schools were established on private initiative which corresponded to the lower stadium of the State Secondary School. Although some of these schools received financial support from the State, their pupils must pay comparatively high fees, and the schools were thus able to take in only a very few children of necessitous parents.

Speedily enough, therefore, came the idea to establish schools in such communes where higher education could be given independently of the pupils' economical circumstances, and schemes in this direction were set on foot. In 1909, the Parliament decided that a considerable grant should be given to schools of this kind established by the commune. According to the regulations the schools were to be superstructured on the sixth class of the

Elementary School and comprise four one-year classes. In this manner an oft expressed desire that the Elementary School should function as the ground or foundational school of the higher school was realized, to some extent, for the first time in Sweden.

The new schools were called Communal Intermediate Schools. Communal because they were established and chiefly maintained by the commune, and Intermediate because their stadium was between the Elementary School and the Upper School. The Communal Intermediate Schools sprang up at such a pace that, in 1927, they numbered not less than 87. The same year, in connection with the Higher School reform already mentioned, the Riksdag decided that fifty-four Communal Intermediate Schools should be taken over by the State and be reorganized as State Secondary Schools. Since this time more Intermediate Schools have come into existence, so that in 1937 they number fifty-three.

The plan of instruction given at these schools resembles that of the State four-year Lower Schools and the course leads up to the "realexamen". The schools have received both boys and girls from the start and have both male and female teachers. A great many of these have had the same training as the State Lower School teaching staff, but there are other possibilities of gaining competence for teachership in these Intermediate Schools. Certain of the schools are exempt from fees, others charge similar fees to those of the Lower Schools. Impecunious pupils have always exemption from fees. Mention has already been made of the experiments with practical courses now being carried on.

Between 1860—70 and during the immediate successive decades, a kind of educational institution was established here and there in the countryside with the aim of affording the youth who had passed out of the Elementary School an opportunity of continuing their studies on a higher stage. This was called the Higher Elementary School. Interest in these schools was great at times and at others rather small. The organization was of a variable character. The course covered one, two, three or at the most four years, the syllabus included the usual subjects and, in addition, one or more foreign languages. In 1918, the Riksdag provided for a reorganization of these schools. For the future they should be of two types, general and vocationally biased. The former should impart instruction comparatively similar to that given at a corresponding stage in the State Secondary Schools, while pupils of the latter type should partake in vocational courses pertaining to a certain trade or group of trades, for instance, commerce, technics and domestic work etc. Many of the Higher Elementary Schools have, of later years, been reorganized to the type of Communal Intermediate Schools.

About the middle of the 19th century a scholastic institution was established in Denmark for young people who, having attained an adult age wished to expand their knowledge in various directions. The schools got the name of the People's High Schools. Towards the end of 1860, Denmark's example was followed by Sweden. Two particular circumstances were contributive. Between 1860—1870 the communal administration was reorganized and simultaneously the old Riksdag, which was based on a division of the people into the various classes, was reconstructed into a Parliament with two Houses whose members were elected, in the Upper House, indirectly and in the Lower, directly. The various groups of the people which, through these profound changes obtained increased influence over the affairs of the communes and State, found themselves faced with entirely new problems entailing the need of a deeper general and civic education. The aim of the People's High Schools was to create possibilities for young people, and especially among the peasant class, to acquire such education. The schools are open to young people of either sex. Usually there is a principal course for men and women pupils and an independent course for women. Some schools have also a second year's course. The instruction is comparatively free from regulations but shall especially aim at imparting to the pupil knowledge of his district and country and such practical instruction as will tend to the attainment of proficiency. A great part of the teaching is in the form of lectures, but individual work is expected of the pupils.

On the whole, interest in the People's High Schools has been great, both on the part of the public and the authorities who have economically maintained them. During the period of industrial depression the schools experienced a great influx, especially of unemployed youth and not the least from among the ranks of the industrial workmen. To facilitate the attendance of the unemployed at these schools, the State and the communes grant subventions in the form of scholarships to many pupils.

Communal Girls' Schools. Not before the establishment in 1904 of certain State mixed schools and Communal Intermediate Schools did there exist schools organized by public authorities which were open to girls. Girls' schools of an older type were still private schools, although they had for many years been supported by the State. When the State Secondary Schools, the Higher as well as the Lower, opened their doors to some wide extent to girls, there arose the idea to reorganize the private girls' schools with the aim of making them more easily available even to girls from impecunious homes. Thus originated the Communal Girls' Schools whose organization in

many respects is akin to that of the Communal Intermediary School. The courses, number of classes etc., coincide with those of the State Normal School for Girls. The leaving certificate awarded by the Communal Girls' School implies the same qualifications as the certificate from the State Normal School.

In the two highest classes the teaching can be organized either on a theoretical or a practical "line". The latter includes needlework, weaving, domestic economy, the care of children, gardening and exercises, which subjects occupy a great part of the time set apart for instruction, thereby severely limiting the number of theoretical subjects in these classes. From among the practical subjects the pupils may select two. Certain girls' schools have the theoretical "line" only, others both the theoretical and the practical.

PRIVATE SCHOOLS.

Private Higher Girls' Schools. Private schools in Sweden have been singularly incomprehensive except in the field of schools for girls, of which a number still remain. They are mostly organized in like manner as are the Communal Girls' Schools, with a theoretical "line", while one and another include also the practical "line". They receive grants from the communes and the State, otherwise they are dependent on the pupils' fees. The certificate received on leaving is of the same value as that awarded by the State Normal School. In some instances the range of the school has been extended by the addition of an Upper School, thus corresponding to the State Higher Secondary School for Girls. These schools are also entitled to hold the general matriculation examination. Private girls' schools, in Sweden, have proved themselves indeed worthy of the higher instruction which has been entrusted to their care. For many years they have, somewhat unaided, afforded possibilities for the girls of the country to obtain a higher education especially suited to young girls. On more than one occasion these schools have led the way in experimenting new methods of instruction and thus have actively contributed towards development in the pedagogic field.

Other Private Schools. As recently mentioned other private schools are on the whole, few in number. The majority of them are organized as are State Secondary Schools and have the right to hold the "realexamen" and the matriculation. Certain of them are open to male pupils, others are mixed schools and it is therefore the custom to combine them under the heading of Higher Boys and Mixed Schools. Some of them might be characterized

as experimental schools where newer pedagogical methods are formed and tried. Others fill a specific purpose and have modified their organization accordingly. Among these Higher Private Secondary Schools there are boarding-schools. This type of school, which in Anglo-Saxon countries is very prevalent, has always been insignificantly represented here in Sweden. The expense which, of necessity, accompanies this kind of school, in a comparatively small country as Sweden, has counteracted its employment to some great extent.

The private schools here mentioned are supported by the State or are subject to the control of some public authority. Obviously there exist besides these a number of private educational institutions of various kinds. Some of them give instruction which has the same aim as the previously mentioned Higher State Schools but the majority afford the pupil training in a certain vocation.

PRACTICAL SCHOOLS FOR YOUNG PEOPLE

LOWER TRADE SCHOOLS.

To the extent that industrialism gained ground in Sweden and kept on the increase, there arose the need of vocational training of various kinds. To meet this need technical and commercial schools and schools for domestic work etc. were established. They were mostly private but by degrees were granted subvention from State and commune. They were not organized according to any special plan and their advent and subsistence for the most part bore the stamp of fortuitousness. But as time wore on, these conditions were felt to be anything but satisfactory and steps were taken for a thorough investigation. In 1918, the Government was in a position to place a scheme before the Riksdag for the establishing of so-called practical schools for young people which would comprise primary as well as secondary schools.

Firstly, a few words concerning primary schools. The obligatory *Continuation School* referred to above which bears directly on a particular trade, should be mentioned as the first directive in the range of practical schools. This Continuation School is basical for schools which aim at vocational education in its truest sense. *The Apprentice School* for commerce, industry, handicrafts, and domestic work, including sloyd for women, the care of children etc., builds on and immediately follows the completed course at the Continuation School. Here the pupils gain a theoretical insight while they

simultaneously carry on with the work they have chosen. The school is held usually in the evening or at some other time of the day which does not encroach upon the practical work. The work is divided into vocational departments. Two one-year classes of 8—9 months comprise the instruction. The municipalities have the authority to make attendance at the Apprentice Schools obligatory for young people who work at a trade. By the side of the Apprentice Schools are courses for older persons, which have proved to be more attractive than the Apprentice Schools themselves, and there have been large numbers of participants.

Pupils who have passed through the Apprentice School and desire still further instruction in their trade, may enter the *Trade School* at which attendance is entirely voluntary and instruction can be arranged in different ways according to the need of the trade. Both day and evening instruction are afforded. The courses can be longer or shorter and they are adapted in accordance with the pupils' advancement. There are trade courses for complete trades, subject courses for a certain part of a trade, and master courses for master craftsmen etc. Short series of lectures and single lectures on technical subjects are given and these have won great popularity among the various handicraftsmen. They are now held all over the country.

For other groups of men and women concerned with the practical side of life there are the one-year *Commercial Schools*, and *Housewifery Schools* which can be established at places where Apprentice and Trade Schools do not exist. Commercial and Housewifery Schools give full day instruction. Shorter courses may also be arranged at these schools.

Workshop Schools belong to the system of practical schools for young people at the primary stage and they have been more recently realized. They are open to boys who have passed through the Elementary School and are arranged so that the pupils can partake in the courses and at the same time attend the Continuation School. The work often resembles that of an ordinary workshop, but there are occasions when the school combines with a workshop at which the pupils are allowed to work. The Workshop Schools have met with great success in the country and have been established at many places where a more comprehensive industry exists. During the economical depression of the last few years, when unemployment was not a little felt amongst the younger people, these schools had a special significance. Workshop Schools were introduced within adversely affected industrial areas and were seen to bring forth excellent results.

All the above mentioned schools may be communal or private with the exception of Apprentice Schools which, with the Continuation Schools, are

obliged to be communal because their pupils may be subject to obligatory attendance. The State grants considerable support to all these schools. Fees may be charged at all but the Apprentice Schools. Exemption from fees is allowed when necessary.

Great were the expectations which awaited the organization of practical schools in 1918. Perchance the realization was not in all respects adequate to the expectation, this mainly due to the economical uncertainty which characterized the times after the Great War and which adversely affected the practical school system. Maybe the experience points to the necessity of a change of organization in one way or another. In any case these schools have gained a great expansion within the country and may be said to have filled an important mission.

TECHNICAL INSTITUTIONS.

To the practical schools for young people certain schools belonging to the secondary stage may be ascribed. First among them should be mentioned the *Technical Trade Schools*, *Technical Higher Schools* and *Technical Elementary Schools*. The Technical Elementary Schools are old institutions and were founded at a time when modern industrialism first reached Sweden. Their foremost aim may be said to have been to train competent foremen to meet an industrial need. The swift development of industry and the technics rendered other forms of training necessary by degrees and, in 1918, the old Technical Elementary Schools met with a new organization. In this manner the Technical Trade Schools and the Technical Higher Schools originated. The Technical Trade Schools concentrate their instruction upon a certain industrial field thus enabling many trades to be represented at the same school. The instruction at these schools affords the pupils considerable practical experience, therefore, the course can be restricted to two years. The Technical Higher Schools aim at imparting the general technical instruction and mercantile training necessary for work in the drawing and business offices of workshops and factories and for managing smaller industrial enterprises. The course takes three years and ends with a final examination called the Technical Matriculation Examination. Two of the old Technical Elementary Schools underwent no change of organization in 1918 and still retain their earlier though, maybe, modernized form. They are both situated in highly developed textile areas in the towns of Norrköping and Borås and have therefore specialized their instruction on this industry. The course covers

three years. The teachers at all these institutions are called lectors. They have various degrees of training. Lectors, who give instruction in purely technical and mercantile subjects must have been through a training course at a Technical High School or at one the Commercial University Colleges in Stockholm or Gothenburg, in addition to having had scientific and instructional practice. Lectors teaching theoretical subjects are obliged to have had the same training as lectors at the State Secondary Schools. There are also teachers of trades and assistants at these Technical Schools. For necessitous pupils the instruction is free. Others pay a very low fee, and from State subvention scholarships are dispensed to pupils with limited means. All these institutions are established and maintained by the State. The municipalities defray the expense of the buildings.

The Technical School in Stockholm is a school of a particular kind and it has existed for many years. Essentially it is a combination of a number of trade schools. It includes an engineering trade school, a building trade school and several courses for industrial art trades. One of the courses is specially set apart for the training of drawing teachers for the State Secondary Schools and other educational institutions. The organization of the School is out of date and before long it is expected to undergo a change.

Special vocational instruction is given at two schools, the *School of Mining* at Filipstad for the mining industry, and the *School of Weaving* at Borås for the textile branch. Both receive grants from the State.

The practical educational "lines" at the standard of the State Lower School and the Practical Intermediate School, mentioned in the foregoing, should be included among the practical schools for young people.

OTHER PRACTICAL SCHOOLS.

Higher mercantile instruction is given in the *Higher Commercial Schools* which are supported both by the State and commune or municipality in which they are situated. The course occupies two years.

There are *Schools of Navigation* instituted and maintained by the State which provide necessary training for the mercantile service and which afford professional training for sea-craft and engineering officials. The schools are divided into classes or departments and a period of one year is calculated for every class.

An important group of schools are those which have to do with the particularly significant branches of sustenance for Sweden namely, agriculture and forestry and their subsidiaries. For agriculture there are schools with different names and various aims. *Schools for Farmers* give

young farmers a more general instruction in such subjects as are of value to the agriculturist. The schools are often attached to a People's High School. In *Agricultural Schools* farmer-foremen and other such officials receive their professional training. These schools are purely vocational. There are *Housewifery Schools* for young women from farmsteads. A neighbouring branch is afforded instruction at the various *Horticultural Schools*. *State Forestry Schools* train foremen and lower State forest officials. And lastly, the *Fishery Schools* should here be named.

There are in Sweden a great number of schools whose aim it is to directly specialize upon one special trade. Obviously it is an impossibility to give a detailed account of them here, but attention should be called to one or two. The *Nääs Sloyd College* possesses that system for sloyd which has become known to all the world and which has been introduced into many foreign countries. Nääs provides annual courses for teachers in which, additionally to Swedes and especially Elementary school teachers, teachers from many foreign countries partake. The *Central Gymnastic Institute* in Stockholm is worthy of mention here, although it strictly belongs to the category of Higher Schools. Men and women teachers are trained at the establishment in gymnastics, games and sport of various kinds, and medical gymnasts may partly obtain their instruction there. As is undoubtedly very well known, Swedish gymnastics has borne the name of Sweden pretty nearly throughout the world and numerous pupils from foreign lands have been attracted to the Institute at Stockholm.

CERTAIN TRAINING SCHOOLS FOR TEACHERS.

In the foregoing has been mentioned how teachers for the State Secondary Schools, Training Colleges for Elementary School Teachers and Elementary Schools received their training. Additionally, there are institutions for the training of men and women teachers, of another kind. To this category belong the so-called *Handiwork Colleges* where women teachers receive instruction in sloyd, and also the *Domestic Economy Colleges* where women teachers are trained in the economy of the home. The former schools are all private but are supported by the State. Of the latter type is one, as before stated, instituted by the State and conjoint with the State Higher Training College for Women; the others are private and receive grants from the State. The School of Domestic Economy at Uppsala is considerably patronized and in many respects it has been a predecessor in its domain. Training is given at the institution both to teachers of handiwork and domestic economy.

GENERAL POPULAR EDUCATION.

A survey of Sweden's educational system were incomplete should mention be omitted of the work which is being carried on to raise the standard of education among adults, especially within the wider social classes. This species of work is partly of good old age. In its modern form it is very akin to the popular educational work which has been connected with the universities and various labour movements of Anglo-Saxon countries. The Swedish popular educational work is mainly pursued on three lines, namely, libraries, popular scientific lectures and so-called study circles. *Public Libraries* have existed in Sweden from the time the Elementary School became compulsory in the country, but not until recent decades has the library system obtained a fixed form and unanimous direction. This control is exercised by the Board of Education which has a separate department for library work. *Lectures* with popular scientific contents were formerly arranged by the Universities but special organizations instituted for the purpose overtook the work. Broadcasting has also contributed of later years to this branch of public educational work. In turn it comprises branches which aim at public artistical education and includes the theatre, music and the educational arts. "*Study circles*" have especially got their expansion within the temperance and labour movements where smaller groups have been formed for common study according to certain plans. Considerable grants are given by the State to all these forms of public educational work.

THE SWEDISH UNIVERSITIES, INSTITU
TIONS OF SCIENTIFIC RESEARCH AND
CULTURAL ESTABLISHMENTS

BY

BÖRJE KNÖS

UNIVERSITIES.

University education in its strict and generally accepted meaning obtains in Sweden at the two complete State Universities of Uppsala and Lund, at the State Caroline Medico-Institute in Stockholm and at the two Private Universities of Stockholm and Gothenburg. The common characteristic of these higher educational institutions is their aim to devote themselves to scientific research and scientific instruction at one and the same time.

SOME HISTORICAL RECOLLECTIONS.

Before the foundation of the Uppsala University there existed in Sweden no higher educational institutions than those cathedral schools which were instituted by every Chapter for the purpose of training coming clergy. The deeper and more comprehensive learning demanded of the higher clergy and Superiors of that day had to be acquired by the Swedes in foreign universities. The medieval Swedish prelates had studied to a great extent at the famous Paris University where, for some considerable time, not less than three of their colleagues were taking active part. At length, the difficulties which arose to finance these foreign studies, combined with an ever growing desire to establish a higher education with the infusion of a national spirit, on Swedish ground, led to the idea of founding a typical Swedish university. This was about the beginning of the 15th century but, however, the plan was not realized until 1477 when it was made possible by the Bull of Pope Sixtus VI. The same year Uppsala University was instituted the first university in Scandinavia. Through the ordinations of the Papal Bull the University received the same privileges and blessings as the renowned Bologna University.

Obviously, it was impossible to organize a complete higher system of instruction all at once. One must consider the slender economical support the Swedish Church was able to give at that time and the still smaller number of native professors disposable. Any real classification of the faculties was out of the question. As a matter of fact there existed no trace

of the faculty of medicine at the first University of Uppsala and the faculty of law probably boasted one single teacher. The remaining professors instructed alternately in theology and philosophy which was then quite natural as the chief aim of the University was to train students for the service of the Church. Uppsala University long had a very precarious existence. There were times when it had to close down because of inner and outer political disturbances. However, a new era began with the reign of Gustaf II Adolf. This King, who was deeply interested in the spiritual cultivation of Sweden increased the professorships, and a real division of the four faculties, theology, medicine, law and philosophy now became an accomplished fact. Some years later, in 1624, the King rendered secure the existence and future of the University by donating the greater part of his patrimony, the "Gustavian inheritance" to the same. This is the largest endowment the University has ever received.

In the middle of the 17th Century when Sweden's most southern provinces were incorporated within the Realm, a new University was founded at Lund (1658) with the object of strengthening the political and humanitarian connections with the newly acquired land. It also received endowments of landed property for its support. The University of Lund was organized in the same way as the sister university of Uppsala, with four faculties.

The University Statutes of the 17th Century are based on the principles of self government. The Universities possessed their own jurisdiction. Governed as they were by skilful and eminent chancellors they were able successfully to defend their autonomy even in absolutism's day when the State interfered with all the domains of cultural and social life. These statutes were valid for nearly 200 years, until 1852, when new regulations were issued by the King. In spite of certain modifications, due to a 200 years' development, the new statutes were based upon the same ground. The most significant amendment was the removal of the academic jurisdiction without any change of disciplinary right over the students. New statutes have been issued by the Government at three different times, the last, dated January 28th, 1916 are, with some slight alterations, still in force.

The unhygienic conditions in Sweden both during and immediately after the Russian War of 1808—1809 gave rise to the idea of establishing a separate institution for medicine and thus the State Medical Faculty, known as the Caroline Medico-Surgical Institute, was founded. Its statutes were issued by the Government simultaneously with, and on the same principles as those of the Universities.

Of the two Private Universities which build their subsistence on private endowments and grants from the respective cities, the one in Stockholm is the

oldest. It was founded in 1877 and has undergone a vast development, especially of later years. At present it comprises three Faculties, a Mathematic-Natural-Science, a Law and Political Science, and a partial section for the Humanities. The University of Gothenburg was established in 1889 and has a Humanistic Faculty only. From the beginning, these Universities were meant to be private and independent institutions for scientific research but, owing to their development, they tend more and more to being on a level with the Universities of Uppsala and Lund. Examinations held at these Universities correspond in value to those held at the State Universities.

THE RELATIONS BETWEEN THE STATE AND THE UNIVERSITIES. THE ACADEMIC AUTHORITIES AND THEIR POSITION.

The State Universities possess *de jure* a certain autonomy which existed before *de facto*. Up to the beginning of the 17th century the Universities lived, for the most part, on their own income derived from the property bestowed upon them. There were successive modifications in this respect as the 19th century wore on. The development in scientific research, as well as the increase in the number of students, made ever greater demands on the Universities. The State was compelled to render economical assistance more and more, and by reason of the subsidies granted to guarantee their development, the State allowed the Universities correspondingly to feel its power. With the grants came obligations, and the State maintains the right to regulate and intervene in various forms of the Universities' activities. Though the autonomy of the Universities is recognized by the State it has thus become in reality considerably lessened.

For each of the Faculties at the Universities and for the Caroline Institute, special regulations for examinations indicating the various examinations which may be taken at the Universities and the subjects these include, are issued by the Government. The Government also appoints the professors and determines the extent of their teaching work as well as their obligational duties on the whole.

Other teachers are appointed by the University Chancellor who prescribes their instructional duties. He stipulates the requirements for examinations, draws up the curriculum and gives detailed instructions as to the teaching in the various subjects.

Broadly speaking one can say that the State fixes the general outlines of the Universities' work as scientific establishments, and leaves to the

Academic Authorities, primarily the Chancellor, the task of organizing the instruction suitably and effectively within these bounds. As regards the subject-matter of the instruction, the time-honoured rule, which leaves Science completely free and unrestrained by State administration, still holds good. The individual professor's sense of responsibility, in face of the liberality of scientific research, characterizes his teaching and the whole of his academic work.

The juridical position existing between the State and the Universities is indicated in the statutes. The Universities are—it is stated—under the protection of the Government, they shall without prejudice enjoy that estate and income which has been lawfully assigned to them, as well as the lawfully conceded rights, privileges and freedoms as far as they are in conformity with the statutes. The Universities are thus looked upon as independent juridical persons who, when their estate or economical interests are at stake, can appear as plaintiff or defendant against the State.

The Government has regulated the outline of the Universities' administration through the Statutes. The forms and comprehensiveness of the Universities' self-government, and the extent to which the State intervenes in the regulation and control of the Universities' administration itself, may more clearly be gathered from a survey of the various organs which exercise the direction or government of these institutions.

Characteristic of the feeling for devotional tradition which the Swedish State Universities are anxious to preserve is the supervision of the same which always prevails. This supervision is exercised by a Chancellor, a direct heirship of the medieval Archbishop who was Chancellor of Uppsala University in his day. The direction and administration of each University is in the hands of a Rector, the Academic Assembly, the Greater and Lesser Consistory and the Financial Committee. Most of these organs were outlined in the 17th century University statutes.

The Chancellor has charge of both State Universities and the Caroline Institute. He is appointed by the Government after election by the professors of the Universities and the Caroline Institute. The Chancellor should be chosen—according to the Government provisions—from among men who, through their social position, coupled with zeal for scientific growth, are able to take an active part in the promotion and care of the welfare of the Universities and Institute, and the prosperity of scientific pursuits.

Thus the Chancellor exercises supervision of all the Universities' affairs. He shall follow the academic instruction, watch that the teachers fulfil their obligations, and pay due attention to the care and administration of the Universities' estate and scientific institutions. In everything for the furtherance of their good, he has the right, when he so deems it necessary, to plead their cause. He issues instructions and regulations for the administration of the Universities' scientific institutions, finance and estate, appoints certain teachers and officials and makes propositions in all questions of appointment which shall be submitted to the Government.

The Chancellor has at his disposition a chancellery paid by the State. A secretary appointed by the Government is at its head. Previously to 1937 the Chancellor had himself received no stipend, but in that same year the Parliament decided he should be given a salary.

The Chancellorship has hitherto been held by persons occupying high positions in the kingdom, and at times by Royal persons. In the presence of the various Governments, Chancellors have vindicated the interests of the Universities, they have been their spokesmen in Parliament, with skill and success they have fought for research and the higher instruction, they have defended the Universities' rights when these were threatened, they have taken under their patronage and helped private, prominent scientists, they have represented the Universities outwardly and have been, so to say, presidents in the free republic of the sciences. But the Chancellors' activities have been of no lesser importance for the inner administration. With insight and prudence they have arbitrated differences and opposition, with aptitude and skill they have managed the Universities' own estate and with wisdom and judgment they have preserved and regulated that self-government which the Universities look upon as their most precious inheritance.

Rector. The Rector is elected for three years by the Academic Assembly. To be eligible he is required to have served a professorship of at least three years at the University. The election shall be sanctioned by the Chancellor.

The Rector, who is chairman of the Academic Assembly, of the Consistories and the Financial Committee, has the immediate care and control of everything connected with the University. Should he so wish, he has the right to be exempt from those instructional and examinational duties which pertain to his professorship. In his absence a pro-Rector discharges his services.

The Universities have striven to acquire as Rectors, names which are representative and illustrious, both in science and administration.

The Academic Assembly comprises all the professors of the University, and at the election of the Chancellor and the Rector, the Head Librarian and Bursar as well. The Assembly may elect certain members of the Greater Consistory, the members of the Lesser Consistory and Finance Committee.

The Greater Academic Consistory is composed of Rector, pro-Rector and a certain number of professors. These are from every Faculty, some as a matter of course, and others, elected by the Academic Assembly. In certain cases the Head Librarian, Bursar, the Institutions' Prefect or Stipendiary Inspector take part in the Consistory as extraordinaries.

The Greater Consistory exercises general supervision and care of the scientific and economical affairs of the University, administers and distributes scholarships, handles propositions for new instruction, regulations and other general prescriptions connected with the University, its learned work, institutions, management and finance; it deals with the question of supply, and makes proposals for the appointment of master-ships and other offices.

In the Greater Consistory is embodied the governing, leading and executive organ which deals with all the University's important questions. It represents outwardly the self-governing University's general conceptions and opinions on weightier matters upon which the University is obliged to utter its views.

The Lesser Consistory consists of a Rector, pro-Rector and a professor from each Faculty or section. In certain cases, also here, the Head Librarian, Bursar, or Stipendiary Inspector take part as members.

The Lesser Consistory superintends the academic instruction and examinations, the relations between teacher and student as regards studies, exercises the University's disciplinary authority over the students, administers and dispenses scholarships, distributes testimonia academica to teachers and students and treats all such University questions as do not fall to the lot of any other academic authority.

The University thus possesses in the Lesser Consistory its executive organ in all matters concerning the inner administration which do not intrude upon the economical management. This belongs to the Finance Committee.

The Finance Committee consists of a Rector, the Bursar and three professors elected for a term of three years. It administers the University's estate and treats all the business and aims which concern the University's management and finance. In those economical questions which shall be

submitted to the Chancellor or Consistory, the Finance Committee is always the preliminary instance.

The Committee decides all economical questions of a more private nature such as the acceptance and giving notice of quittance to tenants and lessees on the University's estates. It lets the farms and other premises, manages the forest surveyance and forestry, has the inspectorship of the University buildings and takes charge of the administration of the University's funds, etc.

The Consistory and Finance Committee submit to the Chancellor's consideration and decision such questions as the purchase of estate on behalf of the University, the disposal, mortgage or exchange of any of this real estate, the erection of new buildings, repairs and such important matters as are not considered to be within the immediate pale of given statutes and prescriptions.

It has been mentioned that the Universities have lost their own power of jurisdiction but have retained their *disciplinary authority over the students*. This authority is vested in a special enactment issued by the Government on behalf of the Universities and Caroline Institute conjointly. The Rector or the Lesser Consistory exercises the authority. According to the type of the misdemeanour is the delinquent judged and punished with exclusion from instruction, admonishment with or without loss of scholarship, and dismissal from the University, for a time, or for ever.

As far as other disciplinary authority goes the statutes contain certain provisions with regard to the customary propriety of superior authority in Swedish Administration. According to these provisions the Chancellor is entitled to give admonition and recommend correction of a teacher or other official guilty of omission or defective service or to adopt juridical proceedings in case of faults of a more serious nature.

The Lesser Consistory has charge of the attendants. In case of default it has power to discharge the offender.

Although the State Universities enjoy a somewhat extensive right of freedom of action in matters of instruction and within the purely administrative domain, their authority and possibilities are exceedingly restricted on the *economical side*. In this respect the development has gone the same way as with most of the old Universities of Europe.

The State Universities indeed still possessed, with proprietary rights, no inconsiderable real estate and property as well as considerable funds. The income from these went far to defray their expenses, but the exigencies of

development and reduced profits of later years, together with the fall in monetary value, rendered it impossible, at length, for the Universities to live on their own means. The State successively came to their aid more and more, and the grants now conceded, exceed manifold what can be derived from the Universities' own means.

Estimates of salaries are fixed in detail by the Parliament and new appointments can only take place through cooperation with the Parliament. The Parliament also grants considerable yearly sums to the University libraries and scientific institutions. The State can thus assert its authority in this connection to a considerable extent and, by granting or not granting, affect the Universities' activities.

The income which the Universities draw from their estates and various resources, is placed in a special fund, one for each University, known as the "reserve fund". It stands at the Chancellor's disposition to be used for occasional needs and such unforeseen emergencies as would tend to the advancement of the instruction, the study, and the University in general. These reserve funds have hitherto played an important part in the Universities' activities. Thanks to the same, it has been possible to procure the material and apparatus necessary for the scientific institutions, to augment the libraries' accessions, to keep up the instruction in certain specific subjects, to modernise and reconstruct institutions, and erect new buildings. Nowadays, owing to the fall in monetary value are these funds very limited, but they are still of a certain amount of importance when there are matters needing immediate attention for which it would not seem expedient to appeal to the State for help. They constitute the modest remains of what was once the Universities' comprehensive economical self-government.

The Caroline Institute is a State Medicine Faculty as already mentioned. It is more extensively developed than the corresponding faculties in Uppsala and Lund. The Institute has an organization resembling that of the old Universities. The only difference is that the Institute comprizes one faculty only. The direction consists of a Rector, the Teachers' Collegium, the Collegium Board and a Board of Administration for economical questions. The Rectors is elected for three years by the Collegium. This institution, which corresponds to the Faculty and the Greater Consistory and the Academic Assembly of the Universities, in one, assembles under the Rector's chairmanship. The authority of the Rector bears relationship to that of the University Rector's, with the addition that he acts as chairman when questions pertaining to administration, instruction, and examinations are dealt with. A deanship exists, but the term here signifies no distinction between

the Collegium as consistorial authority and as Faculty. The Dean is only the Rector's deputy and corresponds to the pro-Rector of the Universities.

The Collegium Board consists of the Rector, the Dean and three professors and it corresponds to the University's Lesser Consistory. The Board of Administration which comprises the Rector, Dean and two professors, corresponds to the University's Finance Committee.

The Caroline Institute which is relatively new, possesses neither estate nor funds to the same extent as do the old Universities. The Institute is, therefore, in greater need of the economical support of the State than these. On the other hand, the Institute has considerable funds for purely medicinal research which the Collegium administers and disposes of according to given ordinations.

The Private Universities of Stockholm and Gothenburg owe their origin to the generosity of private persons but, having been granted examination rights, they are to some extent subject to State control. Funds were granted by the respective cities themselves, when endowments were not sufficiently forthcoming to meet the corresponding demands of development, and these cities have supported the institutions from the very beginning, in all manner of ways. Thus, unlike that of the Universities, the economical control is of a municipal nature.

Each University has its Academic Assembly which consists of all the professors and largely corresponds to the Great Consistory. The so-called Board of Rectors is the counterpart of the Lesser Consistory. The Rector who is chairman of the Academic Assembly and Board of Rectors is appointed by the Assembly for three years, and is invested with the same degree of authority, on the whole, as that of the Rector of the University. The difference in the organization of the State and Private Universities is principally, that the latter have their own direction which is their highest authority and representative organ.

This direction, which has a chairman nominated by the Government and, which, additionally, consists of members appointed by the respective municipalities and learned societies of the place, occupies almost the same position towards the Private Universities as does the Government towards the State Universities, that is to say, it makes the final decisions in all the more important matters. Restrictions accompanying the examination rights render these Universities subordinate in some respects to the Chancellor of the State Universities and the Government. Certain of the Universities' resolutions in order to be valid must be ratified by the Chancellor, others by the State. Professors who are elected by the Boards are then appointed by the

Government. Lecturers (docents) are nominated by the Board and ordained by the Chancellor.

The fundamental regulations of these Private Universities are sanctioned by the State which has the right to give or to refuse this sanction but not to replace any regulation with another.

THE ORGANIZATION OF THE UNIVERSITIES WITH REGARD TO INSTRUCTION AND SCIENTIFIC ACTIVITIES. TEACHER AND PUPIL.

The Swedish Universities have preserved the old medieval custom of classifying the Faculties. At each of the two State Universities there are four, Theology, Law, Medicine and Philosophy, the last mentioned being divided into a section for the Humanities and one for Mathematics and Natural Science. Each Faculty or section exists as decisive authority to its own professors. As chairman of each Faculty or Section functions a Dean, which office is held for one year by the members, in turn, and reckoned from the time of appointment.

Each Faculty is responsible for the maintenance of the academic instruction and science peculiar to itself. The Faculties also exercise the superintendence and examination of academic theses and of other examinations within their respective domains. They shall apportion the duties connected with the examinations, decide and distribute the subjects etc., and are, so to say, the Universities' scientific organ.

The Faculties map out the courses of study which the Chancellor then authorises. These schemes contain the requirements for the different examinations in the various subjects; they specify the necessary literature and give instruction and advice expedient in the arrangement of the various studies. The courses of study and the examination regulations issued by the Government shall be published by each Faculty in a special handbook to furnish the students with information they need in order to utilize the instruction and take their examinations.

The right to be entered as a student belongs to each and all who have passed the general matriculation examination and can produce a certificate of the same. Such certificates may not be more than two years old; if so, it is the duty of the Lesser Consistory to concede the entry.

Moreover, only those may be entered as students who have previously belonged to another Swedish State University and can produce a certificate

of the same, or he who certifies to have studied at a foreign State University and from the Lesser Consistory obtained permission to enter. There are special rules pertaining to the right of entry for students from certain North American institutions. Permission has been granted by the Government to enter students at the Swedish Universities who have taken the Bachelor of Arts or Bachelor of Science degrees at Augustana College in Illinois, at Gustavus Adolphus College in Minnesota, at Bethany College in Kansas and at Upsala College in New Jersey.

The Caroline Institute has the same regulations. Persons who have not matriculated, are allowed to study at the Universities of Stockholm and Gothenburg on special permission.

Characteristic of the old Universities of Uppsala and Lund are the Student Associations dating from the 17th century ("*Province*" or "*Nation*"). Every student, whilst at the University, is obliged to enter one of these Associations. The "*Nation*" Associations, ordained in the University statutes, are mainly arranged according to diocese or province and, as a rule, bear the name of the latter. According to the statutes the students are entitled to enter the Association to which they belong by right of birthplace, parents' place of residence, the scholastic institution they have attended, or, they may even enter the Association to which their father belonged whilst at the University. The Student Associations at each University are thirteen in number and, together, form the Student Corps. In Uppsala each Association has its own house with assembly-rooms, reading room with newspapers and journals and a library. In Lund the Associations have one common building.

Each Association has a superintendent elected by itself from among the University's professors and one or two curators chosen from among the members of the Association. The object of the Associations is to further diligence and maintain order amongst the students and to give their members the opportunity of rendering mutual assistance and support.

The significance of these Associations for students in University cities is by no means small. They bring together students from the same place; through the elder fellow-students, they provide for the new-comer counsel and guidance in his studies, and assistance in making practical arrangements for his stay at the University; and, through those bonds of friendship which unite older and younger generations from the same neighbourhood, they contribute towards creating sound and good feelings of solidarity. They have their origin in the 17th century Swedish diocesan particularism,

and to this day they serve to preserve many of the specialities and characteristics of the various provinces.

Students at the Caroline Institute and the Private Universities of Stockholm and Gothenburg are obliged to belong to the Student Corps existing there.

Broadly speaking, *the teachers* at the Universities may be divided into two categories, professors and docents. To the former category should be included specific teachers, such as laboratory demonstrators, pro-rectors, observatory prefects etc.

The principles which regulate the professorships are characteristic of the Swedish University legislation. They are regulated in detail by the Government and are given to a nicety in the University Statutes. The manner in which candidates are subjected to expert and minute examination is characteristic of the way in which, in Sweden, judgment is passed in the event of academic promotion. The system may be complicated but, undoubtedly, its equivalent in objectivity and accuracy does not exist. It is the fruit of a century long experience and the result of a development based on the national wish to protect and look after both the right of the individual and the public interest at one and the same time.

The foundational regulations stipulate that, in the promotion of academic appointments, no other grounds may be considered or pleaded than the degree of manifest scientific skill.

Proceedings for the appointment of a professor should be taken up one year before the present occupant is pensionable. This is to provide against long vacancies whilst the appointment is being dealt with. The appointment can take place either through application or "call". Only he can be called whose competence for the post is obvious and who is considered worthy of being called to the professorship in preference to every other Swedish man who has applied or been proposed. To be called to a professorship thus implies the recognition of absolute avowal of a scholar and consequently signifies an oft much appreciated honour. However, such a "call" occurs relatively seldom.

One year before his retirement shall, therefore, the professor's chair be declared vacant. After the time of application has expired it devolves upon the members of the Faculty or Section to propose a certain scholar to the vacancy. Such proposals may include persons who both have and have not applied. Three or four experts on the subject or subjects which the professorship comprises, are then appointed. Preferably, these should be

Swedish scientific men. As a rule, they are, but it has often occurred that recourse must be made to experts from the neighbouring Scandinavian countries, at times even to Germany, France, and England.

The selection of these experts is made through the cooperation of both Universities—and of the Caroline Institute in case of medical professorships. The corresponding Faculty or Section at the opposite University, on being informed of the eventual application or “call”, shall propose three or four experts and send their names to the University where pertains the vacant chair. Thereupon, the Faculty or Section of the latter University shall suggest experts, taking into consideration those proposed by the sister Faculty. The proposals are then forwarded to the Greater Consistory which appoints the experts.

In the case of a “call” to the professorship the experts shall eventually give their utterance within forty days. The Faculty or Section then takes up the question for trial and should there be a majority of two-thirds, the same is handed over to the Greater Consistory which, as speedily as possible, furthers it, with observations, to the Chancellor who, in turn, defers it to the Government for judgement.

Should there, on the other hand, be no “call” to the professorship or should a nominee be rejected, shall the experts, after mutual deliberation—if such be possible—each give a written judgement on the candidates’ competence for the post and, in case of several candidates, in their order of merit. These expert-statements are intended to guide the University in its judgement of the applicants. It is then incumbent on each member of the Faculty or Section, having regard to the scientific work of the applicants, and to the statements of the experts, to pronounce judgement and, should there be several applicants, to make due comparison between them.

The matter is now handed over to the Greater Consistory. Here, as before, each member expresses his individual opinion as to the competence of the one or more applicants. In case of the latter three are selected in order of merit and the proceedings are forwarded to the Chancellor who, after due utterance, submits them to the Government whose duty it is to make the appointment.

These rules apply to the State Universities but may on the whole be said to hold good for the Private Universities of Stockholm and Gothenburg also.

The fundamental aim of the Swedish system of promotion is to give each applicant the opportunity of having his abilities put to a fair test by means of a careful and fully objective expert judgement. Obviously the whole apparatus is ponderous and complicated, and paves the way for grievance and academic strife. It may occur that the experts do not agree.

A candidate may attack an expert who has expressed opinion in favour of a competitor and in so doing refer to the one who favoured himself, rousing, thereby, differences of opinion among the experts, the members of the Faculty and Consistory in turn differing as to the candidates, leaving the Government finally in doubt concerning whom of the applicants is the best merited. The general public and especially the press follow these questions with great interest. As a rule, one bows to the decision of the majority of the experts, or to the Faculty's, Consistory's or Chancellor's proposal. The system is thus likely to evoke scholarly disputes but it is characteristic of the Swedish view of giving room for every expression of opinion and to judging a question as carefully as possible from all sides before proceeding to the final decision.

The number of such promotions obviously varies from year to year. Some idea of the figure may be had on taking into consideration that the number of professors at the Uppsala University is 75, at Lunds University 62, and at the Caroline Institute 26. The Private Universities of Stockholm and Gothenburg have respectively 34 and 20.

The University *lecturers* ("docents") are not regular teachers like professors. They are appointed by the Chancellor. Candidates for a lectureship in any science shall apply to that Faculty or Section to which the subject belongs. The Faculty or Section must then consider as to whether the appointment is necessary or of value for instruction and scientific research, and whether the applicant has evinced the proficiency required of a devotee of science and a teacher. The conditions being found satisfactory, the proposition is put to the Chancellor. As a rule, persons are appointed lecturers who, after preliminary studies, have defended a meritorious and well-reported thesis for the degree of doctor. The University is solicitous of having as large a number of lecturers as is necessary for the instruction and, so to say, academic growth and, incidentally, for the recruiting of professorships. Professorships are often filled by the most deserving lecturers. But, of course, not all lecturers can be professors. Many, after some years of academic research, apply for posts outside the University, theologians seek higher clerical offices, medical men become superintendents at the hospitals and philosophers become teachers at scholastic institutions. It has always been considered of importance, and especially within the higher instruction, to acquire persons embodying the principles of a deeper scientific schooling.

Lecturers at the Universities receive no stipend, but to enable them to carry out the necessary instruction to the full, the State has granted a num-

ber of "docent" scholarships, forty-one to Uppsala University, thirty-seven to Lund University, and five to the Caroline Institute. A number of the scholarships are in connection with certain subjects or groups of subjects. They are distributed by the Chancellor and may be held for six years.

The "*exercitiemästare*", still in existence at Uppsala and Lund, is a relic of olden times when the Universities were the general educational institutions of the higher classes, including army officers. By "*exercitiemästare*" is meant the *masters of fencing, gymnastic, riding, and music* and these masters are appointed by the Chancellor. The students have diligent recourse to instruction in the various branches of physical culture, which is bound up with the growing interest of the academic youth in athletics and academic sport.

The academic year commences June 1st and includes two terms, the autumn term from September 1st to December 15th, and the spring term from January 15th to May 31st. These terms comprise the academic year. The remainder of the year is devoted to vacation.

All *instruction* at the Universities is free, as a rule. Students are obliged to pay a certain entrance fee and an annual fee to their Associations as well as a lesser sum previous to each examination, the so-called examination fee. In addition, fees are charged for participation in such courses as natural science and chemistry, and for the maintenance and replacing of adherent material.

The object of the academic instruction is to impart scientific knowledge and further individual scientific development. Each teacher has the privilege of arranging his instruction, with observance of pertaining rules, in the manner which he finds best adapted to the subject. The instruction is either public or private. As regards the public instruction, according to the rules above mentioned, must each professor, without remuneration, hold public lectures on his particular science, one hour, four times a week, unless the Chancellor, on the recommendation of the Faculty, apportions the lectures otherwise or substitutes corresponding instruction in their stead. The cathedra lectures which, almost entirely comprised the sole form of the professor's instruction earlier, are disappearing more and more and being replaced by various kinds of relevant oral and written exercises.

Further, the professor must give instruction on his subject, should such instruction be necessary. This is the so-called private instruction and is

given subject to the advice of the Faculty and according to the decision of the Chancellor. Fees may be charged.

Lecturers are entitled to give instruction to the students of the Universities free of charge, or on receipt of a stipulated fee. This free instruction is given by the lecturers who are in receipt of the "docent"-scholarships. They are obliged to give a number of lectures or other corresponding instruction each term. On the instigation of the Faculty, or by order of the Chancellor, when so desired, a lecturer who has no scholarship, is obliged to give certain instruction on his subject, for which he receives special remuneration from the students. The Chancellor decides upon the remuneration.

The academic instruction of later years has undergone profound changes. The seminary-like forms of education which were gradually brought about during the last decade of the 19th century are fundamentally and essentially connected with the names of the well-known Uppsala professors, Harald Hjärke and Henrik Schück. The content of the reform was, briefly, that the instruction given by the professors was no longer restricted to cathedra lectures but, side by side with these, the pupils were instructed in forms, varying according to the Faculty and the pupils' progress, for instance, pro-seminarium for those intending to take a lower examination and seminarium for those studying for a higher examination, the science of law, or juridical practice in certain juridical disciplines. The aim of all this practice is to accustom the student to scientifically treat and discuss prescribed or optional problems with a view to developing the judgement and capacity to independently solve questions of a scientific nature. A professor of the subject or a lecturer organizes these exercises and they are, as a rule, obligatory for the various examinations. A reciprocity thus arises between teacher and pupil, and a personal contact which, especially in the higher stages of instruction, more easily enables the professor to estimate his pupils' various scientific qualifications and range of knowledge.

Humanistic studies are generally carried on in rooms specially arranged for the purpose — the "seminarium rooms" — which are equipped with the necessary literature. These so-called seminarium libraries play a significant part in the instruction and are a valuable complement to the great University libraries.

Instruction in natural science demands corresponding laboratory and practical courses at the various institutions. For medical training extensive clinical practice is necessary at the University hospitals of Uppsala, Lund or Stockholm which hospitals, in accordance with the promulgated rules and regulations, shall serve the Universities' medical training and medical re-

search, on the whole. The professors have a varying number of assistant teachers at their disposition to aid in the individual instruction of the students.

THE EXAMINATIONS.

The Universities' double mission of being at one and the same time institutions for scientific research and for the higher education of State and Church officials, has entailed the division into scientific examinations and qualifying examinations for official appointments, the latter being also based on scientific University studies.

The right to take an examination is accorded, as a rule, to any student who has passed the Swedish matriculation examination or has studied in the North-American institutions mentioned earlier. Students from other foreign Universities desirous of taking an examination must obtain permission from the Government, in each particular case. The same rules apply to the private Universities of Stockholm and Gothenburg.

To pass an academic examination the student must undergo tests in every subject included in the examination. The examination itself is only a formal proceeding nowadays which signifies a registration and, on the part of the Faculty, a verification of the certificates of the tests or private examinations previously gone through with the professor concerned and, which, for the various subjects, has a stated time of validity. Each private examination is recorded in the student's examination book and has official validity. For the majority of examinations, certificates gained at one university, in specific subjects, hold good in connection with examinations at another university.

Before beginning purely theological studies it is necessary to have passed a preparatory theological-philosophical examination which shall be taken in the Faculty of Philosophy. This examination, which is intended to impart preliminary knowledge for the study of exegetics, dogmatics and ethics comprises Greek and Hebrew as well as theoretic philosophy or latin. After this examination, which is calculated to take from two to three terms, the student is entered in the *Theological Faculty*. The theological "kandidat" examination which follows, comprises all the theological subjects and demands a period of study varying from six to eight terms. For those who have taken this degree and desire to enter the ministry at once, a practical course is arranged every term, which terminates in a practical theological test. But those who aspire to the vocation of teacher must undergo an examination in the Faculty of Philosophy in one of such specified subjects as, Nordic languages, history, latin etc. The Faculty's scientific examination is

the theological licentiate which can only be taken after the "kandidat" examination has been passed and includes two of the subjects from the same. A scientific thesis shall be written on one of these subjects.

To obtain entry in the *Faculty of Law* the student must have passed tests in certain specified humanistic subjects included in the matriculation examination. The "juris kandidat" is the examination obligatory for the legal profession and the one more general for the Civil Service. It includes all the subjects of the Faculty and takes from ten to eleven terms. Recently, a direct examination for the Civil Service has come into force which may be taken in the Faculty of Law. It is the Political Science-Law examination, and it comprises both the subjects of political science belonging to the Faculty of Law and certain subjects included in the Faculty of Philosophy as well as national economy, statistics and the science of government etc. The "juris licentiat" is a higher scientific examination which can only be taken by students having the degree "juris kandidat" and who have done a certain amount of official work. This examination is taken in two of the Faculty's subjects.

To enter the *Medical Faculty* the student must have passed tests in certain specified natural science subjects included in the matriculation examination. The medical "kandidat" examination, which is taken in six theoretical subjects, is a preparatory examination entitling the student to participate in the practical classes for the medical licentiate examination. This examination comprises ten clinical subjects with obligatory courses and hospital walking. Passing this examination legitimizes the title of doctor. The minimum time required to take the medical "kandidat" examination is eight terms and the average time between this and the licentiate examination is eleven to twelve terms. Training for the medical profession, in Sweden, thus takes at least ten years.

Each student who has matriculated and is admitted into the University is entitled to enter his name in the *Faculty of Philosophy*. A qualifying general matriculation certificate is necessary before an examination in certain subjects can be taken. The "filosofie kandidat" examination which establishes no official competence and only entitles the student to take the licentiate examination must include at least three of the Faculty's stipulated subjects; a higher certificate is necessary, however, in two of the same. This examination is nowadays, as a rule, regarded as a preliminary to continued studies in another Faculty, generally Theology or Law, or for special studies within the Faculty of Philosophy itself. The "filosofie magister" examination is obligatory for professional appointment at Secondary Schools. It is taken in certain given groups of subjects,

each group being formed with regard to the combination of subjects the teacher intends to take up at his forthcoming official duties. A higher certificate in at least two of the subjects in each group is required. The average time needed for taking the "fil. kand." examination should be from three to four years and for the "fil. magister" examination, four to five years. The periods vary considerably, according to the subjects which are included in the examination. The longest periods are those which include lengthy, obligatory courses, such as, the history of literature, geography, chemistry, and zoology. With a view to certain branches of the Civil Service a political Science-Philosophy examination has recently come into force which comprises certain obligatory subjects of Political Science, such as, national economy, statistics, the science of government and eventually other subjects akin to these. The higher scientific examination in the Faculty of Philosophy is the "filosofie licentiat" which may be taken by those who have already passed any of the previously mentioned examinations. A higher certificate in at least one subject is requisite for the same and, in addition, an approved scientific thesis on this subject.

Scientific studies at the Swedish Universities generally terminate with an *academic disputation* which confers the degree of "doktor". The right to publish and publicly defend a thesis is granted—according to the University statutes—to those who wish to enter the teaching profession, to those who desire appointment as docent at the University or to licentiates taking the degree of doctor. The thesis shall be printed and examined by the Faculty concerned and it may not be publicly defended more than once. It may be published in Swedish, Latin, German, French or English. It should be defended in Swedish but in certain cases this may occur in the language in which it is written. The Faculty shall appoint one of its teachers to oppose in the disputation. The author himself has the right to choose two opponents. Everyone present may raise questions at the disputation, if he wishes. The Faculty is the judge and awards the certificate with regard both to the content of the thesis and to its defence. With due reference to the Chancellor, licentiates who have fulfilled the conditions for taking the "doktor's" degree in any of the four Faculties, may be promoted to the degree of "doktor" at the University, where the disputation took place.

To the *Private Universities of Stockholm and Gothenburg* the Government grants the right to hold examinations for a certain number of years, generally five. The statutes stipulate as a condition, mainly, that the Universities both as regards their instruction and their examinations shall follow the regulations laid down for the Universities.

SCHOLARSHIPS ETC.

Characteristic of the Swedish student is his contraction of debt to enable his studies. For centuries Swedish students have mostly come from necessitous or less well-to-do homes. Years of study have brought with them great expense, and in order to finance their studies they have been obliged to take up loans which must be paid off by instalments when, later, the examination passed, they have obtained remunerated appointments.

The scholarship system which is traditional in this country has, therefore, arisen and developed to provide means for needy students during their stay at the University. To some small extent these scholarships derive from the State. The greater part come from the numerous endowments which have been made to the University for this purpose during centuries. Application may be made for the majority of the scholarships and they are bestowed for any course of study whatever. A certain number are set apart for a specific Faculty in which respect the theologians have the advantage. There are also many Association ("Nation") scholarships which are apportioned only to members of the Associations in question. For some of the scholarships the relations of donors have preference or other specifications are given. In addition there are a number of scholarships for travel. These sums vary and are dispensed at different intervals. Each scholarship has its own trustee. This is generally a University professor, who often takes part in selecting the recipient and follows the course of his study and conduct. The older scholarships from the 17th and 18th centuries have decreased in value, due to monetary changes, but they are still of certain significance.

Students who are directed to take up loans for their studies should do this, as a rule, in the place where they live, through the various loan-offices and saving-banks. To the extent the Student Associations have funds to administer, a great proportion is devoted to study loans. In some cases special loan funds have been founded, whereupon certain Associations have opened accounts with banking institutions from which their members may take up loans. There is in both Uppsala and Lund a student corps banking account for the purpose of providing loans for the students.

Much has also been done of later years for the housing of the students. In Uppsala the student corps has erected a building containing fifty-eight rooms, at its own expense, which rooms are let to students at a somewhat lower rate than is usually the case. Further, a special organ, "The Uppsala Student Housing Foundation" has been instituted to carry out the plans of furnishing the students with new and up to date quarters. A large house has been built by this Foundation with seventy-eight single rooms and

fifteen two-room apartments, which are either let at a low rent or, according to the scholarship, placed free of rent at the disposition of the necessitous student. Some of the Associations have rooms for students on their premises and other Associations are planning the erection of new houses. There are already a number of homes for students in Uppsala, but the accommodation is limited. Lund also has a number of such homes with a few free quarters for scholarships. Additionally, it has a convictorium for the corps where a great number of the students take their meals at a lower price than elsewhere.

There are a number of endowed scholarships and a fund for loan at the Caroline Institute in Stockholm also. The conditions are identical at the Private Universities of Stockholm and Gothenburg, where the students corps have their own house with rooms for a lesser number of students and board possibilities at a cheap rate.

BUILDINGS, SCIENTIFIC INSTITUTIONS AND ORGANIZATIONS ETC.

The university buildings of Uppsala and Lund which originate from the latter part of the 19th century include besides aula and lecture halls, rooms and offices for the academic authorities, art collections etc. The development of the universities and the changes which the academic instruction has undergone during the last decades have been so considerable that the buildings are no longer adequate to the increased instructional demands. The Humanistic subjects may especially be mentioned in this connection. The so-called seminaria for Humanistic instruction including their library, have had to be quartered in separate buildings belonging to the University. Instruction in certain subjects of the same Faculty where materials for object-lessons are extensively needed, for instance, for the history of art, archeology etc., has also been located at separate University buildings. The Faculty of Natural Science which, since olden times has had its own particular quarters, has almost entirely been moved to new and modern buildings during recent years.

The most important of all the University buildings in Uppsala and Lund are the libraries which are considerable in size with, nowadays, a quite modern interior. In addition to a comprehensive and exceedingly valuable collection of manuscripts, these libraries possess the most essential foreign literature for instruction and research. The press is obliged to send to these libraries copies of all the literature which is issued within the country.

Increase in the number of students, the demand for more and more literature and, above all, the fact that the students use the libraries more than before for their studies has, of late years, necessitated their extension and that of the reading rooms and rooms for scientific research. The various branches at the different institutions have their special libraries, and students are able to carry on their studies also there.

Up to the middle of the 19th century the Universities erected their buildings at their own expense. To-day the new buildings are being raised by means of Government grants. This has become a matter of course, when the Universities have found it impossible, in the majority of cases, to meet the considerable expenses occasioned by the same.

The institutions of the Caroline Institute are at present quartered in various older buildings which are no longer adequate to their development and ever increasing number of pupils. There is a proposition to erect quite new premises for the same in connection with the new State hospital now being built for clinical instruction in Stockholm.

At The Stockholm Private University which is a relatively new institution, the Humanistic and Natural Science Faculties have each their own buildings and the years have carried with them institutions of various kinds. The Private University at Gothenburg is smaller, and comprises only a Humanistic Section which occupies but one building.

As already mentioned, the object of the Universities is not only to give instruction for the various official careers but they are also institutions where invaluable scientific research is carried on. It is this very scientific research that, in the course of time, has successively created the significant scientific special institutions which now exist. These have grown up under the patronage of the Universities. Though quite free and independent as regards their research, these institutions are administratively subordinate to the academic authorities but receive considerable State grants for their maintenance and the carrying on of their work.

According to the University statutes, the various institutions and any collection belonging to the same, shall be in charge of a professor of the science to which the institution and collection pertain. Should there be several professors within the same branch the Chancellor has the right, on the advice of the Faculty in question, to decide which professor shall hold the office.

To mention all the scientific institutions would be inexpedient. It should suffice to name the most important and best known.

As regards the University of *Uppsala* there are the following: The physical-chemistry institution under the direction of Professor Th. Svedberg, recipient of the Nobel prize, is an institution of high rank to which come scientific men and students from all parts of the world to make their specific investigations. Professor Svedberg has received large subventions from both public and private directions wherewith to carry out his own investigations which are chiefly within the field of colloid-chemistry and enzyme-chemistry. He has, additionally, at his own institution made important investigations on the physical-chemistry of albuminous substances and on the photographic processes.

The physical institution under the management of Professor M. Siegbahn, also a winner of the Nobel prize, has developed scientifically to an enormous degree. It attracts scholars and students in great numbers and it has also been richly endowed. Many pupils from the institution have made valuable contributions to physics. Of Professor Siegbahn's personal famous research are his röntgen spectral analyses the most known.

The institute for high tension research is a modern institution situated outside the city of *Uppsala* for the scientific investigation of electric high tensions. Its sphere of study is more immediately the disturbances and damages to electric wires and installations which are caused by lightning. The institution is, therefore, in close connection with such organizations as have interest in the results of these investigations and has at its disposition an advisory commission including representatives of the University of Technology, the Telegraph, Railway and Waterfall Boards and of the Electric Industry.

The institute for racial biology is not directly subordinate to the University but collaborates intimately with its various scientific institutions. Its mission is to scientifically exploit this area with special attention to the Swedish people and to the interior conditions of the country. The institution is subject to the authority of the Chancellor and is under the superintendence of a special board. A professor in racial biology at the University officiates as director. The institute receives scientists and it has published a number of much appreciated investigations.

Among the Humanistic institutions the archives of the names of places is noteworthy. It is under the direction of a professor of the same science and its work is to investigate the names of Swedish places. From the beginning it was of a more linguistic-etymologic character but merged by degrees into the more general philologic. Numerous collaborators have, therefore, been attached to the institution, whose comprehensive work is warmly cited

by the press and elsewhere. The institution has the assistance of an advisory commission.

The archives of the Swedish dialects is an institution which has the aim of investigating the Swedish dialects and traditions of the people. The institution carries on a systematic investigation in the country-sides and works on such lines as will give a complete survey of the development of the Swedish dialects. The director of the institution is assisted by a special board. The institution has its own budget. Its activities are carried on within the University library and are of great importance to the Study of Nordic languages.

The most important of the institutions at the University of *Lund* are as follows:

The institution of the research of heredity under the direction of Professor H. Nilsson-Ehle has principally the object of scientifically studying the anatomy of plants. The institution experiments heredity and makes racial-oecological investigations at certain disposable experimental fields in varying climatic regions. The work of the institution and its results have been of great benefit even to practical agriculture.

The Limnological institution carries on its research in a laboratory at Aneboda in Småland, thus, outside the University city. It mainly carries on a biological investigation of fresh water and is visited by numerous foreign scientists. It also serves practical purposes.

The Historical Museum is an institution for scientific research. Archeological investigations form the centre of its activities. It possesses singularly valuable collections both prehistoric and of the history of the arts, and carries on comprehensive work in archeological fields.

The following institutions collaborate to some extent with the *Private University at Stockholm*.

The Metallographical institute is under the superintendence of a special board. Its work lies within the domain of metallography and other akin sciences and it supports Swedish industry with technically scientific investigations.

The Bio-chemical institute is under the directorship of Professor H. von Euler, a recipient of the Nobel prize. Its investigations are focussed on bio-chemical problems. With the aid of a staff of pupils and colleagues Professor von Euler has carried on considerable enzymetic research. His investigations have comprised vitamins and hormones.

VOCATIONAL HIGHER SCHOOLS.

Outside the range of the Universities have, during the last century, Vocational Higher Schools grown up in Sweden which, like the Universities, have the double aim of imparting scientific instruction for special trades and at the same time carry on scientific research within their respective domains. They are supported for the greater part by the State. Both the organization and instruction are subordinate to the rules and regulations of the same. The organization of these schools is, on the whole, very similar. A Rector and the teachers' collegium—the names vary—comprise the management. The supervision is exercised by a special board or direction comprised variously and endowed with authority which, in many respects, resembles that of the Chancellor in connection with the Universities. Nearly all the Vocational Higher Schools have erected modern institutions and buildings by means of grants from the State. Owing to the force of circumstances have the majority become located at Stockholm or in the immediate neighbourhood of the capital.

The University of Technology in Stockholm which dates from the year 1825 has undergone a speedy and comprehensive development especially during the last decades. It may now be said to have reached its summit as regards technical scientific instruction and research. According to its regulations, the University shall impart instruction in technical science and the art of building and further development within the area of their activities.

The University comprises nine departments: for technical physics, for machinery and mechanical technology, for ship-building, for electro-technique, for construction of roads and water-ways, for chemistry and chemical technology, for the science of mining, for architecture, and for land-surveyance. It has a supervisory board consisting of a chairman and ten members appointed by the Government. The immediate authority is vested in the Rector, the teachers' collegium, and the collegium and administration boards which correspond to the State Universities' consistories and financial committee. The Rector is elected from among the teachers by the collegium for a period of three years. Some of the teachers are professors-in-ordinary appointed by the Government, and others are elected by the board for a certain time, to give instruction in specialized subjects. The number of professors at the present moment is thirty-eight. Their appointment takes place in a similar manner, on the whole, to that of the professors of the State Universities.

The University comprises important institutions which are exceedingly well-developed within their various sciences, and which have at their disposition a well-organized and rich scientific-technical library.

There are the ordinary students who intend to take the full examination and students who wish to gain a certificate in certain subjects, whilst others participate in specialized instruction without taking any examination at all. Pupils desirous of being accepted as ordinary students must, in general, have passed the matriculation examination with qualifying certificates in certain subjects or have gained corresponding attainment. Only a limited number of students can be received and consideration, to some great extent, is given to previous practical activities.

The obligatory instruction comprises lectures and visits to industrial works and other places significant for the studies of the pupils. For the final examination it is necessary to have taken part in practical activities, varying in duration, within some of the departmental fields. The courses cover four years but students have the right to take three years for the two lower courses and the two higher, respectively. This option has been given with special regard to those desirous of deepening further into one or two subjects. No noteworthy movement takes place either between the first and second, and third and fourth years' courses thus, by dividing the period into two main parts, the studies and instruction obtain a far greater freedom. To gain the final certificate the student must also have executed special technical, scientific examination work in some of the University's subjects. For this purpose the student is almost free from obligatory instruction during the last term. These examination tasks enable the pupil to accustom himself to independent scientific work.

The examinations held at the University of Technology comprise civil engineering, mine engineering, architecture, and land-surveying. The titles assigned to the various examinations are reserved to the University.

The student who has taken the final examination at the University with a qualifying certificate in certain fundamental subjects and, afterwards, for at least two years, entered upon technical or technical-scientific activities may take an examination which is somewhat akin to the University licentiate examination. The student then has the right to take the technical doctor's degree by publishing and publicly defending a thesis. The disputation corresponds approximately to the State University regulations for the same. To those who have successfully gone through the disputation proof is granted the degree of Doctor of Technology.

As at the State Universities the students have a corps and dispose of their own corps buildings and club quarters. Fees to a certain extent are

charged for instruction. An appreciable number of scholarships are distributed to facilitate the studies. Certain of the bursary funds dispense scholarships only for study abroad.

Chalmers Technical Institute in Gothenburg has recently developed a university character. Its general aims coincide with those of the University of Technology, in Stockholm. Originally founded on private endowments the institution has, by degrees, become more and more a State establishment. The present six departments include machinery, chemistry and chemical technology, house-building, electro-technique, ship-building, and civil engineering (construction of roads and waterways).

The Institute is under a special supervisory board, consisting of seven members. The immediate superintendence is exercised by a Rector and the teachers' collegium. The Government appoints the Rector for three years from among the professors. The teachers comprise ordinary professors elected by the Government—at present fourteen in number—and teachers for special subjects appointed by the board. The appointment of professors is carried out on approximately the same lines as at the State Universities.

Some modern buildings have been added to the Institute of late years. The State has not yet issued any regulations as to the pupils and their entry, nor has it yet laid down any rules regarding the instruction or examinations.

The Veterinary University in Stockholm aims at imparting instruction based on scientific research, in all subjects which are necessary for the training of veterinaries. A board of six persons, of which four are appointed by the Government, exercises supervision of the University. The Rector and the collegium are the immediate superintendents. The teaching staff comprises eight professors appointed by the Government. There are also laboratory demonstrators and assistant teachers.

To obtain admittance as a pupil it is necessary to have passed the general matriculation examination with a qualifying certificate in certain subjects. Fifteen pupils are accepted each year. Owing to the extreme concentration of the studies, they are protracted over a period of six years. Through parting the greater subjects, for instance, medicine and surgery, into their subdivisions and separate smaller examinations, the students are enabled to take the latter while the various courses are in progress. The time set apart for this course of training comprises two periods. At the close of the first period pupils take what is known as the "veterinärkandidatexamen", or approximately their Bachelor degree. The veterinary examination proper concludes the second period. After having passed these examinations the

veterinary, to obtain his legitimation, must serve four months as assistant to a practising veterinary appointed by the Board of Directors of the Medical Department. The University has, nowadays, the right to confer the degree of doctor after the prescribed tests.

The University disposes modern buildings and it includes a number of clinics where sick animals are received for treatment and care. These simultaneously serve the practical instruction under the supervision of the professors in charge.

The Institute of Dentistry in Stockholm has a unique position among the Vocational Higher Schools organizationally, in that it is under the supervision both of the Chancellor of the State Universities and to some extent under the leadership of the Caroline Institute. Thus is it partly conjoint with the latter while, at the same time, it enjoys a somewhat independent position of its own. The training of dentists is the object of the Institute.

The Institute has a limited number of ordinary teachers appointed by the Government and a considerably greater number of laboratory demonstrators and assistants elected by the Chancellor. The superintendent is appointed by the Government.

Some of the subjects are theoretical and these are taken at the Caroline Institute. Others are practical and the instruction pertaining thereto is imparted within the Institute's own quarters. At the close of the theoretical studies which demand at least one year, the pupil takes his "tandläkare-kandidat" examination. Three years are calculated for the practical studies, which lead to the examination conferring the degree of dentist.

The students pay annual fees and compensate for material and instruments. To the Institute is attached a clinic which is exceedingly frequented. The considerable income thus brought in goes to the State, which is answerable for the Institution's activities and management.

The Pharmaceutical Institute in Stockholm is for the training of pharmacists. It is under the superintendence of a board consisting of five persons of which three are elected by the Government. The instruction is given by a lesser number of ordinary professors appointed by the Government. There are also laboratory demonstrators and extra teachers.

Those who aspire to the pharmaceutical profession shall serve at least two years as pupil at a pharmacy after having matriculated. Such positions are obtained through the Pharmacists' Association, and for a specified time the pupil shall receive instruction from the superintendent in certain pharmaceutical work. This experience is followed by a course of about six

months at the Pharmaceutical Institute, which course terminates in the "farmacie kandidat" examination. The pupil is then obliged to serve at least another year at a chemist's and go through another two-year course at the Institute after which the Pharmaceutical examination may be taken. The training thus takes approximately six years.

The Agricultural University College of Ultuna near Uppsala aims at assisting the development of agriculture through scientific investigations. It also gives instruction on a scientific basis in such subjects as belong to the agricultural area. The College possesses an agricultural estate which has a special steward. A board of eight persons, of which four are elected by the Government, supervises the College. The immediate control is in the hands of a Rector and the teachers' collegium. The latter, fourteen in number, are professors appointed by the Government and there are a number of teachers for special subjects.

There are ordinary students who wish to take the full examination, whilst others specialize in certain subjects and gain certificates in these.

To be admitted as an ordinary student must the qualifying matriculation examination have been passed or at least three years spent in practical farming. The instruction takes the form of lectures and practice as well as of demonstrations and excursions. The agronomic examination and the degree of agronomic licentiate may be taken at the College. For the former one of the three following sections may be chosen: the farming section, the domestic animal section or the economy section. It comprises two departments, the one mainly including mathematic-natural science subjects, the other, specialized agricultural subjects. The course covers between three and four years. The agronomic licentiate examination is taken in two subjects with higher certificates and a scientific thesis on the main subject. A licentiate may proceed to the degree of Doctor of Agronomics.

The University of Forestry in Stockholm originates from 1828 and is accordingly one of the oldest Vocational Higher Schools in Sweden. This is not unnatural when the importance of scientific forestry and scientific qualifications for the same were early considered and understood. The object of the University is to train foresters on scientific grounds. It has a supervisory board consisting of five members and it is under the superintendence of a Rector and the teachers' collegium. The staff comprises four professors, a number of lecturers, assistants and other teachers.

The University provides two courses in forestry, a higher and a lower. The former, which is the forester's course, is for the training of persons suited

to an independent administration of the greater forests and it includes a preliminary practical course at one of the greater Crown lands in central Sweden, which takes about one year, and a three- to four-year course at the University. To gain admission, the student is required to have passed the general matriculation examination. The number of pupils is limited. The lower course is to give practical insight and proficiency in forestry to the extent requisite for assisting in the administration of greater forests or in the management of forests with lesser demands. This course, for which considerable practicable preparatory work is necessary, should cover approximately two years.

The Commercial University Colleges in Stockholm and Gothenburg are private institutions founded on private endowments. The College in Stockholm receives grants from the State. They are under the supervision of boards, the chairmen of which are appointed by the Government. The professors, seven at Stockholm and three at Gothenburg, are appointed by the Government after election by the board.

Pupils are mainly required to have passed the general matriculation examination for entry at the College. An examination in economics, and a higher, more comprehensive examination known as the economic magister examination (approx: M.A.) are held at the institution. The former takes from two to two and a half years. The latter may only be taken by those who have passed the examination in economics.

The Central Gymnastic Institute at Stockholm was founded in 1813 and is possessed of illustrious traditions. The work of the Institute is to train gymnastic teachers and medical gymnasts and to further the development of gymnastics through instruction and research. Its direction is elected by the Government. There is also a superintendent and the collegium. The teachers, who are appointed by the Government are trained partly gymnastically and partly medicinally.

According to recent reorganization it is prescribed that the training shall be conducted on two lines, the one being for gymnastic teachers, the other for medical gymnasts. The training for the former should comprise two years of study, for the latter three terms. The instruction, with a view to the subject, shall be imparted in the form of lectures, demonstrations, practical classes, and practical work. The direction decides the range of the instruction. Previously to the general examination the pupil is examined in every subject which can be combined with practical proof. The subjects included in the examination for teachers comprise partly the purely med-

icinal: anatomy, physiology, sanitary science, and partly the gymnastical and pedagogical: the theory of gymnastics, the theory of games and sport as well as psychology and pedagogics. Proof must be given in skill in gymnastics, games, and sport and, additionally, the capacity to give instruction in the same. This examination confers the title of gymnastic director. The majority of the subjects comprised in the examination of the medical gymnast are medicinal: anatomy, physiology, general pathology, sanitary science, medical science, and medical gymnastics. Added to this, skill in the practice of medical gymnastics is requisite. The theoretical instruction in the medical subjects is given at the Caroline Institute, and the teaching of medical gymnastics at a department of one of the greater clinical hospitals in Stockholm. All other instruction is given at the Central Institute.

The High School of Arts in Stockholm is under the supervision of the Academy of Fine Arts. Its purpose is to provide instruction for painters, sculptors, and architects. The teaching staff includes a director who is elected by the Academy from among well-known artists, for a term of three years, and teachers who are appointed by the government, and styled professors.

The School comprises four sections for drawing, painting, sculpture, and architecture respectively. Pupils of the first three are, during the first year, known as "aspirants". They are then awarded a pupil's diploma. Movement from a lower to a higher stage may occur at any time of the working year. The longest period allowed for study is six years, for architecture, seven years. Pupils with the highest merits may, to the extent available, obtain studios free within the School.

The School has free quarters within the building of the Academy of Arts.

The Conservatory of Music in Stockholm is under the superintendence of the Academy of Music. Its object is to afford musical training to pupils and to examine persons who desire professional appointments as organists, music teachers or directors of military orchestras.

The instruction which is imparted by a number of professors is arranged by a board comprised of certain elected members of the Academy under the supervision of a director. The latter is chosen by the Academy for a period of six years. The subjects are divided into special groups, some of which are for particular studies, and others for examinations. The longest time allowed for study is three years, in certain groups four years. At the Conservatory may be taken the following examinations: the higher organist's examination, the cantor's, the music teacher's, and the military

orchestral director's examinations. The lower organist examination may be taken at places appointed by the Government, the examiners being selected by the Academy.

INSTITUTIONS FOR SCIENTIFIC RESEARCH, AND OTHER CULTURAL ESTABLISHMENTS.

The institutions for scientific research, in Sweden, have from the beginning, developed under the patronage of the Universities. As may be seen from the foregoing, important establishments for research are always attached to the Universities. With the foundation of the various Vocational Higher Schools certain of these have also become centres for scientific specialized investigations. During the 18th century there arose in Sweden scientific academies which, early, became, and still remain the central point for the promotion of scientific research equal to that of the Universities. A certain rivalry and competition arose especially between the academies in Stockholm and those of the small University cities, particularly Uppsala, a competition which, at certain epochs, assigned the scientific preeminence to the Capital and at others to the University cities. This coincided with the tides of culture which flowed not only over Sweden but throughout most of the civilized countries of Europe. Nowadays, conditions are more stabilized and there can be said to prevail a more balanced distribution of work in the scientific field between the institutes for research in Stockholm and those attached to the Universities. However in recent times, in Sweden, as in the majority of other countries, a marked general tendency is noticeable to establish the newer scientific institutions away from the already heavily laden Universities and attach them to the private academies of the Capital town. These institutions which play an important rôle in the scientific life of the country are partly State establishments under some academic general superintendence or other, or institutions founded on private endowments or funds. In the former case they are located in State buildings and for their maintenance and research are supported by grants from the State as well as by private endowments. In the latter case the expenses are entirely defrayed by private funds and in exceptional cases by State subventions.

Sweden also possesses a large number of State Institutions which, in addition to certain administrative functions, have scientific research as one of their most important aims.

Primarily must be called to mind Sweden's most important and largest scientific academies and the institutions for research which are under their control.

The Swedish Academy of Science was founded in the year 1739 and is coupled with some of the country's most renowned scientific names, such as Linné, Celsius, Bergman, Swedenborg, Berzelius. According to State regulations the object of the Academy is to promote the growth of the sciences and, in particular, the natural sciences and mathematics. With this in view the Academy has at its disposition a number of scientific institutions; it issues several series of important scientific publications, it administers a comprehensive natural science library, dispenses subvention from its funds to aid devotees of science, etc. The Academy consists at the most of a hundred members distributed within eleven classes and an equal number of foreign members.

The most important of the institutions under the Academy's supervision is *The Natural History State Museum*. This is purely a State Institution which is upheld financially by the State but whose administration is entrusted to the charge of the Academy. It is situated in the vicinity of Stockholm and is housed in a monumental building in the immediate neighbourhood of the Academy's own quarters. The activities of the Museum include seven sections. They are, the mineralogical section with its mineralogical and petrographical collections, the paleobotanic with collections of fossilized plants, gymnosperms, cryptogams, and mosses, the botanic section with collections of angiosperms, algers, lichens, and fungi, the paleozoological section with collections of fossilized animals, the non-vertebral with the lower species of spineless animals, the entomological section with collections of spiders, myriapods, and insects and the vertebral section with its collections of vertebral animals. Each section is under the superintendence of a professor appointed by the Government who has at his disposition a scientifically and technically trained staff.

A lesser part of the collections is open to the public. The majority are intended for scientific research. They include comprehensive and rich finds from Sweden and even considerable collections from all parts of the world brought home by scientists from Swedish scientific expeditions. The most famous are the collections from the polar regions, and the whale museum, one part of the vertebrate department, being from a scientific viewpoint the most valuable in the world. Objects of intense study for both Swedish and foreign scientists are the great collections of Swedish minerals, the Regnell Botanic Collections from South America and the West Indies, and the famous collections of fossilized plants. Within the various sections of the State Museum is carried on a comprehensive exchange with foreign museums, and an exceedingly intense scientific research work is executed

there not only by the staff but by private scholars, as far as the accommodation of the Museum allows.

Under the superintendence of the Academy of Science is *The State Ethnographical Museum* with its ethnographical, archaeological, and anthropological collections. The collections from America and Asia are exceedingly important. Certain of the objects were brought to Sweden at the time when Linné's pupils made their famous expeditions to lands beyond the seas but a great number are from more recent scientific journeys. The Museum, which also carries on important research work, is under the direction of a professor appointed by the Government and is organized in accordance with the Natural History State Museum.

Of the Academy's own institutions which are independent of the State the *Observatory* founded in 1753 and, nowadays, situated at Saltsjöbaden near Stockholm must first be mentioned. The new Observatory which is entirely erected on endowments made to the Academy is one of the most modern and best equipped in Europe. It is under the supervision of a professor and a staff all of whom receive their salaries from the Academy.

The Bergian Gardens (Bergianska trädgården) which also owes its existence to an endowment, is situated in the immediate neighbourhood of the Natural History State Museum and the Academy's own localities. The institution is under the direction of a professor and comprises two departments. One is purely scientific while the other is of a more practical character and it carries on exchange with a large number of corresponding foreign institutions. Its rich collections afford great possibilities to botanical research and investigations.

Kristinebergs Zoological Station on the west coast is the Academy's institute of research for biological sea investigations where students at the Universities and Vocational Higher Schools may have the opportunity of making their specialized studies.

The Mittag-Leffler Institute of Mathematics was founded 1919, by the well-known mathematician Professor G. Mittag-Leffler and presented to the Academy of Science. Its aim is the furtherance of studies within the realm of mathematics. The Foundation, which is located in one of the Academy's endowed buildings, comprises an exceedingly valuable library, in all probability one of the richest mathematical libraries in the world. The institution is under the supervision of a professor who lectures at the Institute and receives and directs the various Scholars who come there. Its immediate direction is consigned to the charge of the members of the Academy's class for pure mathematics.

The Nobel Institute of Physics is under the direction of the Academy of Science as is also the *Institution of Experimental Physics* now being built, which is upheld by private donations and State subvention.

Among the Nobel Institutions *The Nobel Medical Institute* with its biochemical section must be called to mind. It is under the supervision of the University Chancellor and its aim, through research, is to support the Caroline Institute in its capacity of dispenser of the Nobel prize for Medicine.

The Swedish Academy of Literature, History, and Antiquities was founded in 1753. The object of the Academy, according to Government regulations, is to promote the study of history, of the antiquities and of other humanitarian sciences and to have supervision over the country's relics of antiquity and those State Collections which have been entrusted to its care. The Academy includes ten honorary members, and of its acting members fifty are Swedish and twenty-four, foreign persons. The King's Custodian of Antiquities officiates as Secretary and is at the same time the first curator of the country's relics.

The State Historical Museum with its comprehensive collections of Northern archeology, medieval archeology and art, its cabinet of coins and medals and an extensive library is under the supervision of the Academy.

It is the most important museum and the names H. Hildebrand and O. Montelius who extensively developed not only the collections but also the systematic treatment of the same are connected with it of later years. The Museum is purely a State institution. New buildings are under erection for its housing. With its rich collections, among which are a number of the finest relics of the Northern peoples, the Museum is an institution of international importance. Comprehensive archeological and antiquarian research is here carried on, and the results are given out in the Academy's publications. Besides the Museum's numerous staff there are places open to private scholars.

The East-Asiatic Collections are comprised within the Academy of Literature, History, and Antiquities. They form a valuable collection of archeological and artistic objects principally from China. Here is carried on a highly estimated research on the part of the various scientists. The results are published in a periodical issued by the Collections.

The Swedish Academy was founded in the year 1786. It is the institute which exercises eminent care of the Swedish language and literature. Not only has the Academy supervision of the Nobel Institute which supports

the Academy in distributing the Nobel prize for Literature, but it has charge of *The Institute of the Dictionary* (ordboksinstitutet) housed in the library of the Lund University. Its work is to compile a dictionary of the Swedish language, and it is the most comprehensive and important work the Swedish philological research has to show. The plan first mapped out for this dictionary was, doubtless, from a scientific standpoint, the best imaginable, but it was found necessary to somewhat reorganize and modify the same. Without reduction of the scientific requirements the work has advanced of late years at an enormous pace and its completion is estimated to take place within the immediately forthcoming decades. The foremost eminent scholars relative to the research of the Swedish language have been engaged for longer or shorter periods in compiling the dictionary.

As before mentioned, there is a large number of State organizations and institutions directly under the supervision of the Government which, in addition to administrative duties, are extensively employed in purely scientific research.

In the *Humanistic* field attention should be drawn to the following:

The National Record Office is not only the most important centre of Sweden's archives comprising all the older administrative documents of Home and Foreign Affairs to which have been and are continually being incorporated a large number of private collections, but is also an institution for the promotion of historic research, and in this connection it issues publications of importance for Sweden's history as well as historic and other investigations relative to its field of activities. With its rich collections the State Archives is the central point for Swedish historical research.

The Royal Library in Stockholm and the great libraries of Uppsala and Lund are the most important scientific central libraries in the country. The Royal Library's more immediate field of collection is the Humanistic Sciences, because the Mathematic-Natural Science literature chiefly obtains at the various particular libraries of the Capital. Preferably, the Royal Library contains all literature published in the Swedish language, and with its rich collections of manuscripts the library forms the nucleus of humanistic and scientific-historical research.

The State Museums in Stockholm which have not hitherto been specially mentioned combine the care of their various collections with a scientific treatment of the same. The National Museum which includes the Swedish State Art Gallery, the Armoury containing collections from the Royal Armoury and Wardrobe and a general historical Arms department may especially be mentioned in this connection. Further, the Technical Museum

with its Collections witnessing to technological development, and the Army and Navy Museums inclusive of their collections telling of the history of the wars, etc. should not be omitted.

Scientific work also carries on at a large number of museums outside the Capital. Especially important in this respect is the *Museum at Gothenburg*, an institution supported by both private and municipal endowments. It has different and, on the whole, independent departments of which the collections pertaining to the history of civilization, the Natural History Museum, and the Museum of Arts should be mentioned. To this group belongs the *Museum of the History of Civilization* in Lund with its collections and researches from within the history and archeology etc. of Southern Sweden.

Within the field of *Medical Research* are the Scientific Institutions whose work it is to supply the Board of the Medical Department, which is the highest State Medical authority, with requisite scientific information and investigations.

To this category belong the State Bacteriological Laboratory for bacteriological, terapeutical, and serological investigation, the State Public Analytic Laboratory for medico-forensic investigations, the State Pharmaceutical Laboratory for the investigation and control of medicine and pharmaceutical productions and the State Veterinary-Bacteriological Laboratory for research concerning infectious diseases amongst domestic animals.

All these laboratories have at their disposition scientifically trained superintendents and staff. The results of their scientific investigations are mainly issued in special publications.

In the *Geologic—Hydrographic* domain the following scientific institutions are specially noteworthy.

Sweden's Geological Investigation aims at acquiring knowledge of the country's general geognostic character by means of scientific methods and with special attention to the practical significance of the various kinds of rock and earth. The institution also works out special descriptions of mineral deposits and pit-coal finds and executes hydrogeological investigations. Additionally, detailed researches are carried on within more limited areas and relative to special problems of a practical or theoretical nature.

The institution does a comprehensive field-work and the most important results of these activities are published in geological charts with accompanying descriptions and in scientific treatises.

The superintendent has at his side a number of scientifically trained officials. The institution disposes of a museum illustrating Sweden's geology, the purely theoretical as well as the practical, which museum is contained in the same building as the Natural History State Museum.

The State Meteorological-Hydrographical Institution shall acquire knowledge of Sweden's meteorology and fresh-water hydrography with the aid of scientific methods of investigation and with due regard to the sustenance and practical things of life. The results of the Institution's various investigations are given out in special publications.

A supervisory board and a director, especially the latter, act as immediate authorities. There are also a number of scientifically trained assistants.

The Swedish Hydrographic-Biological Commission scientifically studies the hydrographical and biological conditions of the various seas with which Sweden is partly surrounded, with reference to the requirements of the deep sea fish. This is done by means of hydrographic observations and fathomings as well as biological fishery investigations. A president and five members comprise the Commission. These are appointed by the Government. The work is executed by scientifically trained specialists.

The most important investigations are carried on at the Bornö laboratory on the west coast of Sweden.

Within the domains of *Agriculture and Forestry* there are the following establishments for scientific research:

The State Institute of Experimental Forestry and the previously mentioned University of Forestry form the centre of forest research in Sweden. There is a close connection between the two institutions and they submit to the same authority. The supervision is exercised by a professor who has a staff, scientifically trained in forestry, at his disposition.

The work is carried on in three sections, a forestry department which is concerned with the maintenance and valuation of forests, a natural science department whose aim it is to study botany and the science of wooded ground, and an entomological forest department for the investigation of the forest's entomological fauna. Each section is under the supervision of a professor appointed by the Government.

The Central Institute for Agricultural Investigation forms the direction of the research whose object is the development of agriculture. Its work is to organize systematic investigations in the different parts of the country and by means of scientific experiment solve the most important practical agricultural problems. The activities at this institution have become

exceedingly comprehensive both as regards direct service to practical agriculture and to the development of the science of agriculture itself.

The establishment is under the direction of a supervisory board comprising seven persons, of which three are appointed by the Government, and work is carried on in five departments. The department for agriculture and the cultivation of plants arranges so-called local land experiments in various parts of the country to show how the various land should be manured, when chalk should be administered, which are the plants most adapted, how weeds can be best combatted etc., and it undertakes the management of similar experiments at the request of local organizations. The department for the care of domestic animals and the dairy-department give advice and information in connection with the same. The agricultural-botanic department receives notice from all parts of the country concerning disease and damage to plants, it examines the plants sent in for investigation, gives advice as to the treatment of the disease or takes charge of the case itself. Amongst other things the chemical laboratory cultivates the bacteria of leguminous plants with which seed or land is inoculated to further the growth of certain leguminous plants. The laboratory, in addition, gives advice and information. Each department has a supervisor with the title of professor. There is also a scientifically trained staff.

The collaboration between the departments is carried on through a committee consisting of the Secretary of the Academy of Agriculture and the heads of the departments who work out the schemes for the coming year.

The State Institution for the Protection of Plants executes scientific investigations and practical experiments to protect agriculture against harmful growths and animals. The institute has a supervisory board of six persons of which three are appointed by the Government. It comprises three sections, a botanical, a zoological, and a department for information and control. The first two sections scientifically study the diseases of plants and the life of harmful animals, with a view to prevent their further propagation. The last mentioned department has the office of making known the results of the activities of the other departments to the public. Each department has its own particular chief with a scientifically trained staff at his disposition.

An interesting and typically unique position within the Swedish scientific and cultural life is occupied by the *Nordiska Museum and Skansen*. This institution of considerable dimensions scientifically investigates and spreads knowledge within the country of the history of the civilization of the Swedish people and their immediate neighbours from about 1500 to our

day. Viewed organizationally, the institution is a private foundation under the name of the "Nordiska Museet" which, as the "property of the Swedish people" is under the control of a private committee. This latter, nowadays called Nordiska Museet's board, comprises a director and six persons and it has the right of self-completion with the exception of one member who is appointed by the Government.

The institution, which is situated in Stockholm, includes a monumental museum-building and Skansen, the open-air museum. The latter, which was the first of its kind in the world, demonstrates typical buildings and interiors from various parts of Sweden, gives living ideas of the customs and art of the people from the country's different provinces and affords enlightenment as to the Nordic nature by means of botanical and zoological collections.

The Museum itself which receives considerable State subvention includes sections of great importance which demonstrate the civilization of the peasantry as well as the gentry, and there are also scientific archives. The institution is a centre for research work and for the care of monuments and traditions of the history of civilization dating from 1500 and, chronologically viewed, it is a complement or a continuation of the activities which carry on at the State Historical Museum. At the Nordiska Museet a zealous research goes on, and collections are sought and received with utmost keenness. Investigations and discoveries are published, and the institution has energetically contributed towards awakening interest in the various parts of the country for the preservation and protection of old monumental buildings and national traditions.

The officials of the institute are a director and four intendants who exercise supervision of the departments concerning the peasantry and gentry and Skansen's history of culture and natural science sections.

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